DURABRAND

SERVICE MANUAL

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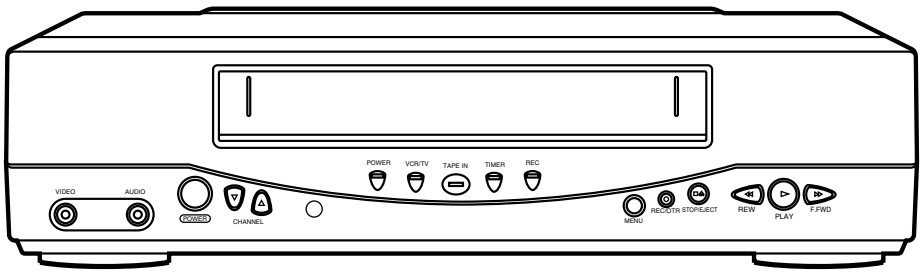
- Specifications
- Preparation for Servicing
- Adjustment Procedures
- Schematic Diagrams
- CBA's

Sec. 2: Deck Mechanism Section
- Standard Maintenance
- Alignment for Mechanism
- Disassembly/Assembly of Mechanism
- Alignment Procedures of Mechanism

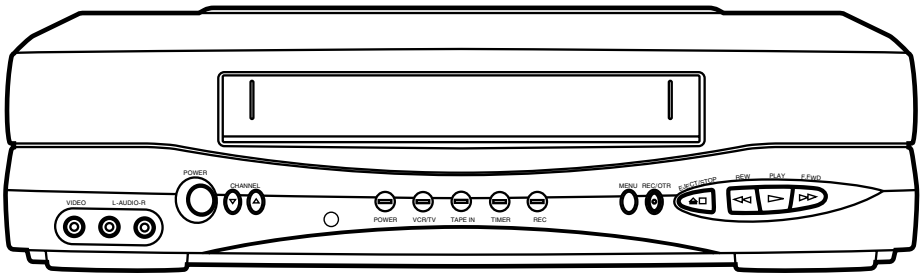
Sec. 3: Exploded views and Parts List Section
- Exploded views
- Parts List

VIDEO CASSETTE RECORDER

DCV203



DCV603



VHS

IMPORTANT SAFETY NOTICE

Proper service and repair is important to the safe, reliable operation of all Funai Equipment. The service procedures recommended by Funai and described in this service manual are effective methods of performing service operations. Some of these service special tools should be used when and as recommended.

It is important to note that this service manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It also is important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. Funai could not possibly know, evaluate and advice the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, Funai has not undertaken any such broad evaluation. Accordingly, a servicer who uses a service procedure or tool which is not recommended by Funai must first use all precautions thoroughly so that neither his safety nor the safe operation of the equipment will be jeopardized by the service method selected.

MAIN SECTION

VIDEO CASSETTE RECORDER

DCV203/DCV603

Sec. 1: Main Section

- **Specifications**
- **Preparation for Servicing**
- **Adjustment Procedures**
- **Schematic Diagrams**
- **CBA's**

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SPECIFICATIONS

Description	Unit	Minimum	Nominal	Maximum	Remark
1. Video					
1-1. Video Output (PB)	Vp-p	0.8	1.0	1.2	SP Mode
1-2. Video Output (R/P)	Vp-p	0.8	1.0	1.2	
1-3. Video S/N Y (R/P)	dB	40	45		SP Mode, W/O Burst
1-4. Video Color S/N AM (R/P)	dB	37	41		SP Mode
1-5. Video Color S/N PM (R/P)	dB	30	36		SP Mode
1-6. Resolution (PB)	Line	230	245		SP Mode
2. Servo					
2-1. Jitter Low	μsec		0.07	0.12	SP Mode
2-2. Wow & Flutter	%		0.3	0.5	SP Mode
3. Normal Audio					
3-1. Output (PB)	dBV	-9	-6	-3	SP Mode
3-2. Output (R/P)	dBV	-9	-6	-1.5	SP Mode
3-3. S/N (R/P)	dB	36	41		SP Mode
3-4. Distortion (R/P)	%		1.0	4.0	SP Mode
3-5. Freq. resp (R/P) at 200Hz	dB	-11	-4		SP Mode
(-20dB ref. 1kHz) at 8kHz	dB	-14	-4		SP Mode
4. Tuner					
4-1. Video output	Vp-p	0.8	1.0	1.2	E-E Mode
4-2. Video S/N	dB	39	42		E-E Mode
4-3. Audio output	dB	-10	-6	-2	E-E Mode
4-4. Audio S/N	dB	40	46		E-E Mode
5. Hi-Fi Audio [DCV603]					
5-1. Output	dBV	-12	-8	-4	SP Mode
5-2. Dynamic Range	dB	70	85		SP Mode
5-3. Freq. resp (6dB B.W)	Hz		20 ~ 20K		SP Mode

Note: Nominal specs represent the design specs. All units should be able to approximate these – some will exceed and some may drop slightly below these specs. Limit specs represent the absolute worst condition that still might be considered acceptable; In no case should a unit fail to meet limit specs.

IMPORTANT SAFETY PRECAUTIONS

Product Safety Notice

Some electrical and mechanical parts have special safety-related characteristics which are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified by a ⚠ on schematics and in parts lists. Use of a substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire, and/or other hazards. The Product's Safety is under review continuously and new instructions are issued whenever appropriate. Prior to shipment from the factory, our products are carefully inspected to confirm with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced**.**

Precautions during Servicing

A. Parts identified by the ⚠ symbol are critical for safety. Replace only with part number specified.

B. In addition to safety, other parts and assemblies are specified for conformance with regulations applying to spurious radiation. These must also be replaced only with specified replacements.
Examples: RF converters, RF cables, noise blocking capacitors, and noise blocking filters, etc.

C. Use specified internal wiring. Note especially:

1)Wires covered with PVC tubing

2)Double insulated wires

3)High voltage leads

D. Use specified insulating materials for hazardous live parts. Note especially:

1)Insulation tape

2)PVC tubing

3)Spacers

4)Insulators for transistors

E. When replacing AC primary side components (transformers, power cord, etc.), wrap ends of wires securely about the terminals before soldering.

F. Observe that the wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).

G. Check that replaced wires do not contact sharp edges or pointed parts.

H. When a power cord has been replaced, check that 5 - 6 kg of force in any direction will not loosen it.

I. Also check areas surrounding repaired locations.

J. Be careful that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

K. Crimp type wire connector
The power transformer uses crimp type connectors which connect the power cord and the primary side of the transformer. When replacing the transformer, follow these steps carefully and precisely to prevent shock hazards.
Replacement procedure

1)Remove the old connector by cutting the wires at a point close to the connector.

Important: Do not re-use a connector. (Discard it.)

2)Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

3)Align the lengths of the wires to be connected. Insert the wires fully into the connector.

4)Use a crimping tool to crimp the metal sleeve at its center. Be sure to crimp fully to the complete closure of the tool.

L. When connecting or disconnecting the internal connectors, first, disconnect the AC plug from the AC outlet.

Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts, and wires have been returned to their original positions. Afterwards, do the following tests and confirm the specified values to verify compliance with safety standards.

1. Clearance Distance

When replacing primary circuit components, confirm specified clearance distance (d) and (d') between soldered terminals, and between terminals and surrounding metallic parts. (See Fig. 1)

Table 1 : Ratings for selected area

AC Line Voltage	Clearance Distance (d) (d')
120 V	≥ 3.0 mm (0.118 inches)

Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

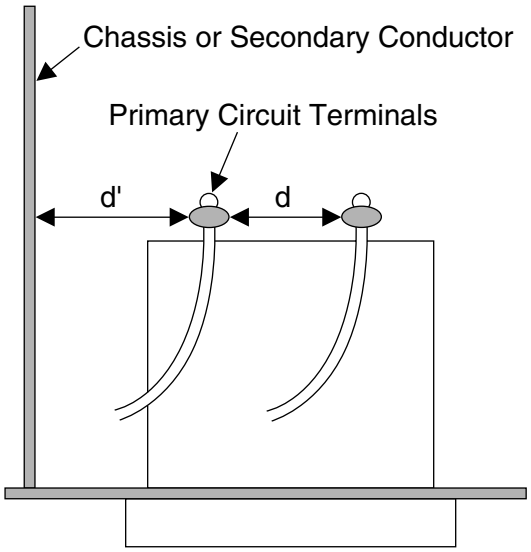


Fig. 1

2. Leakage Current Test

Confirm the specified (or lower) leakage current between B (earth ground, power cord plug prongs) and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.) is lower than or equal to the specified value in the table below.

Measuring Method (Power ON) :

Insert load Z between B (earth ground, power cord plug prongs) and exposed accessible parts. Use an AC voltmeter to measure across the terminals of load Z. See Fig. 2 and the following table.

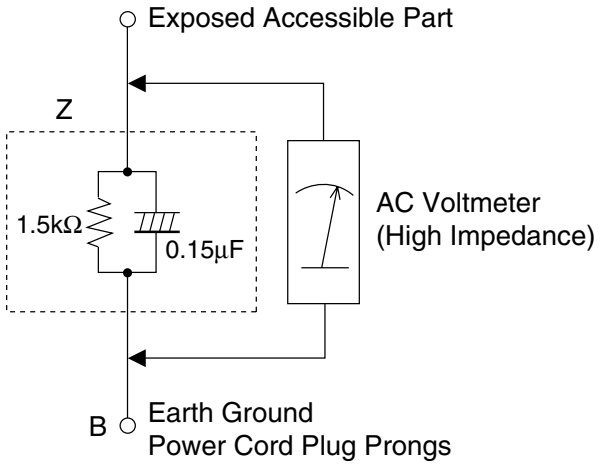


Fig. 2

Table 2: Leakage current ratings for selected areas

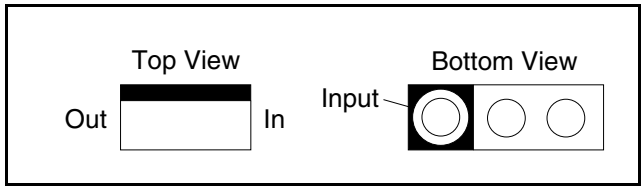
AC Line Voltage	Load Z	Leakage Current (i)	Earth Ground (B) to:
120 V	0.15μF CAP. & 1.5kΩ RES. Connected in parallel	i≤0.5mA Peak	Exposed accessible parts

Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

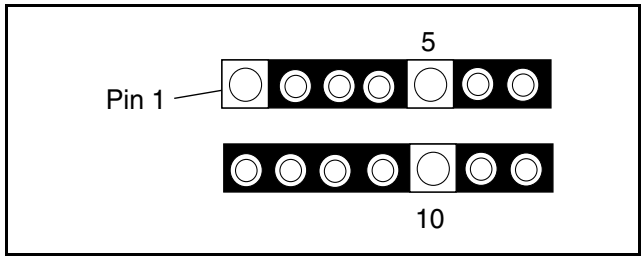
STANDARD NOTES FOR SERVICING

Circuit Board Indications

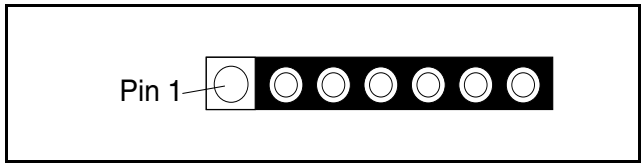
a. The output pin of the 3 pin Regulator ICs is indicated as shown.



b. For other ICs, pin 1 and every fifth pin are indicated as shown.

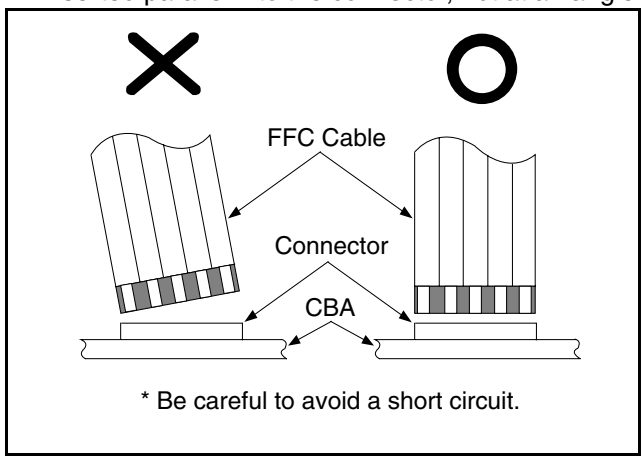


c. The 1st pin of every male connector is indicated as shown.



Instructions for Connectors

1. When you connect or disconnect the FFC (Flexible Foil Connector) cable, be sure to first disconnect the AC cord.
2. FFC (Flexible Foil Connector) cable should be inserted parallel into the connector, not at an angle.



How to Remove / Install Flat Pack-IC

1. Removal

With Hot-Air Flat Pack-IC Desoldering Machine:

(1) Prepare the hot-air flat pack-IC desoldering machine, then apply hot air to the Flat Pack-IC (about 5 to 6 seconds). (Fig. S-1-1)

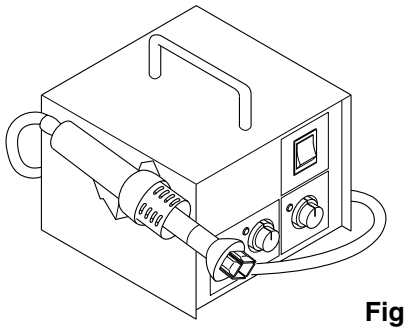


Fig. S-1-1

(2) Remove the flat pack-IC with tweezers while applying the hot air.

(3) Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)

(4) Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

Caution:

1. Do not supply hot air to the chip parts around the flat pack-IC for over 6 seconds because damage to the chip parts may occur. Put masking tape around the flat pack-IC to protect other parts from damage. (Fig. S-1-2)
2. The flat pack-IC on the CBA is affixed with glue, so be careful not to break or damage the foil of each pin or the solder lands under the IC when removing it.

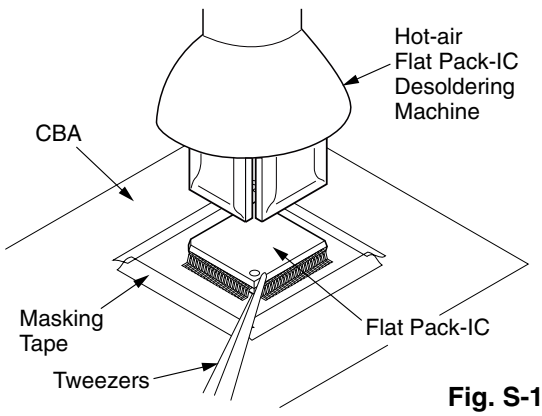


Fig. S-1-2

With Soldering Iron:

(1) Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)

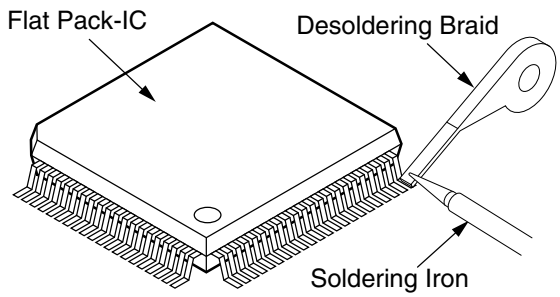


Fig. S-1-3

(2) Lift each lead of the flat pack-IC upward one by one, using a sharp pin or wire to which solder will not adhere (iron wire). When heating the pins, use a fine tip soldering iron or a hot air desoldering machine. (Fig. S-1-4)

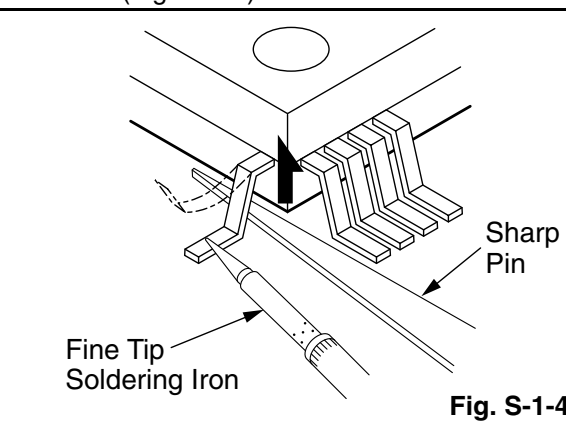


Fig. S-1-4

(3) Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)

(4) Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

With Iron Wire:

(1) Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)

(2) Affix the wire to a workbench or solid mounting point, as shown in Fig. S-1-5.

(3) While heating the pins using a fine tip soldering iron or hot air blower, pull up the wire as the solder melts so as to lift the IC leads from the CBA contact pads as shown in Fig. S-1-5

(4) Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)

(5) Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

Note:

When using a soldering iron, care must be taken to ensure that the flat pack-IC is not being held by glue. When the flat pack-IC is removed from the CBA, handle it gently because it may be damaged if force is applied.

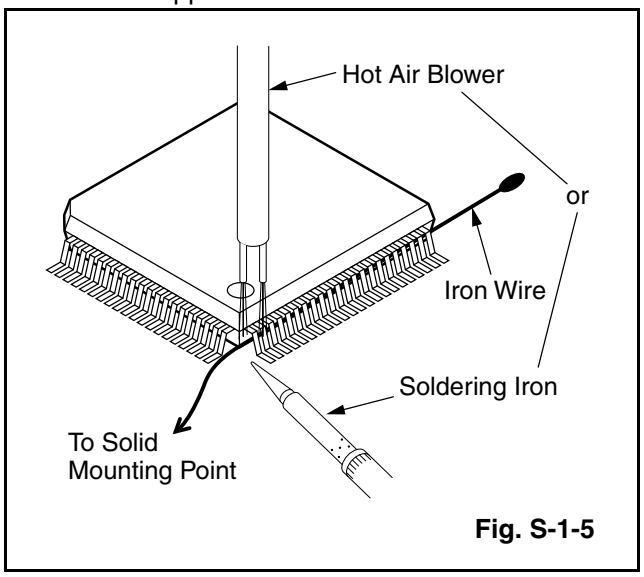


Fig. S-1-5

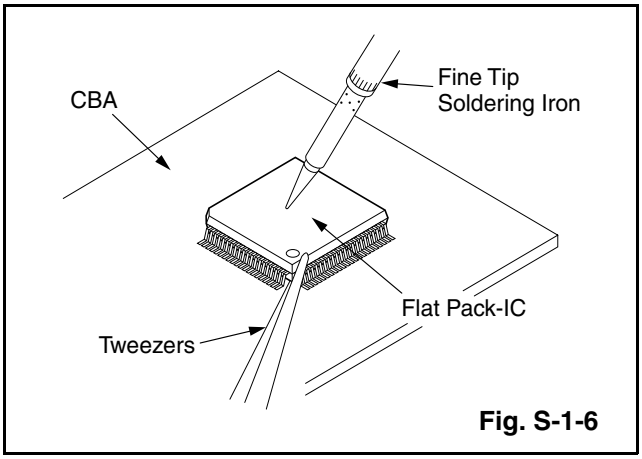


Fig. S-1-6

2. Installation

(1) Using desoldering braid, remove the solder from the foil of each pin of the flat pack-IC on the CBA so you can install a replacement flat pack-IC more easily.

(2) The " ● " mark on the flat pack-IC indicates pin 1. (See Fig. S-1-7.) Be sure this mark matches the 1 on the PCB when positioning for installation. Then presolder the four corners of the flat pack-IC. (See Fig. S-1-8.)

(3) Solder all pins of the flat pack-IC. Be sure that none of the pins have solder bridges.

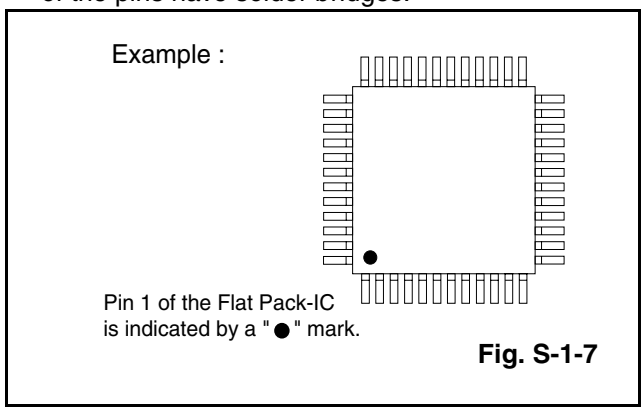


Fig. S-1-7

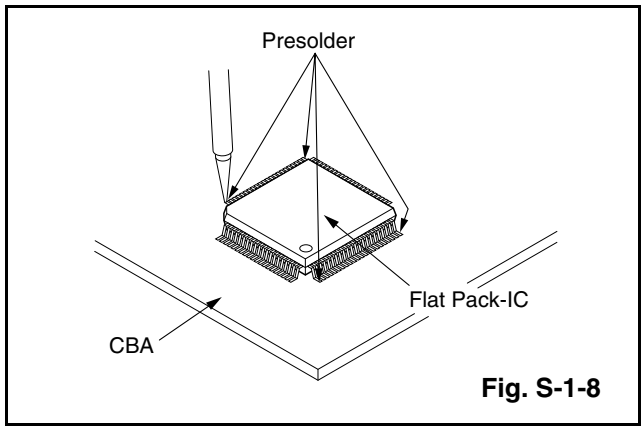


Fig. S-1-8

Instructions for Handling Semi-conductors

Electrostatic breakdown of the semi-conductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

1. Ground for Human Body

Be sure to wear a grounding band (1MΩ) that is properly grounded to remove any static electricity that may be charged on the body.

2. Ground for Workbench

Be sure to place a conductive sheet or copper plate with proper grounding (1MΩ) on the workbench or other surface, where the semi-conductors are to be placed. Because the static electricity charge on clothing will not escape through the body grounding band, be careful to avoid contacting semi-conductors with your clothing.

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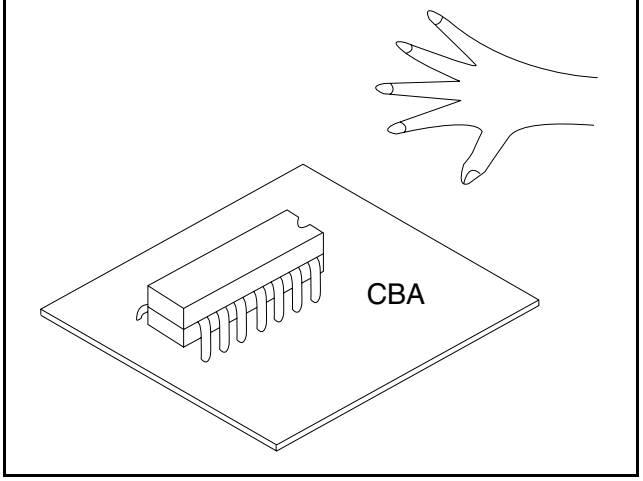

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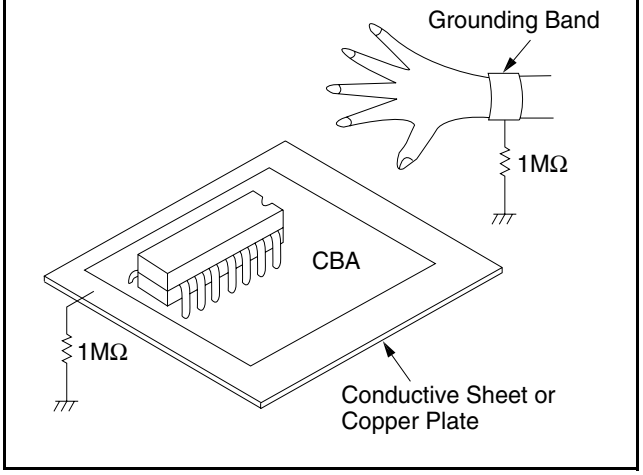


PREPARATION FOR SERVICING

How to Enter the Service Mode

About Optical Sensors

Caution:

An optical sensor system is used for the Tape Start and End Sensors on this equipment. Carefully read and follow the instructions below. Otherwise the unit may operate erratically.

What to do for preparation

Insert a tape into the Deck Mechanism Assembly and press the PLAY button. The tape will be loaded into the Deck Mechanism Assembly. Make sure the power is on, TP502 (SENSOR INHIBITION) to GND. This will stop the function of Tape Start Sensor, Tape End Sensor and Reel Sensors. (If these TPs are connected before plugging in the unit, the function of the sensors will stay valid.) See Fig. 1.

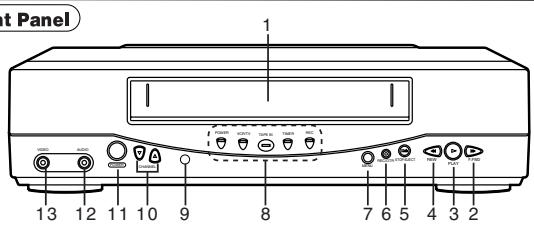
Note: Because the Tape End Sensors are inactive, do not run a tape all the way to the start or the end of the tape to avoid tape damage.

Fig. 1

OPERATING CONTROLS AND FUNCTIONS

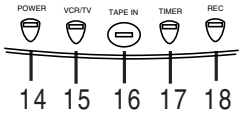
[DCV203]

Front Panel



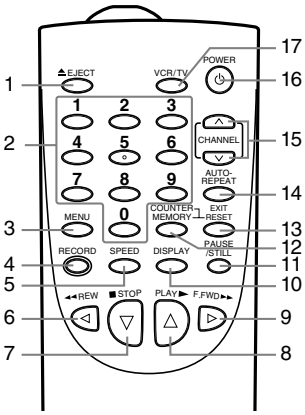
1. Cassette Compartment
2. F.FWD button
3. PLAY button
4. REW button
5. STOP/EJECT button
6. REC/OTR button
7. MENU button
8. Display Window
9. Remote Sensor
10. CHANNEL (▽/△) buttons
11. POWER button
12. AUDIO Input jack
13. VIDEO Input jack

Indicators



14. POWER indicator
15. VCR/TV indicator
16. TAPE IN indicator
17. TIMER indicator
18. REC indicator

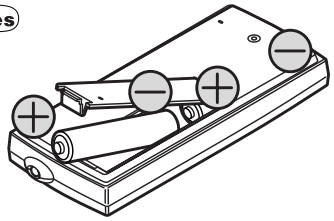
Remote Control



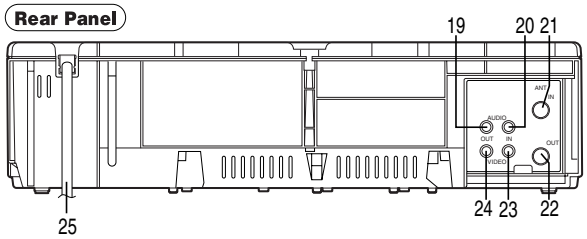
1. EJECT button
2. NUMBER buttons
3. MENU button
4. RECORD button
5. SPEED button
6. REW button
7. STOP button
8. PLAY button
9. F.FWD button
10. DISPLAY button
11. PAUSE/STILL button
12. COUNTER MEMORY button
13. COUNTER RESET/EXIT button
14. AUTO REPEAT button
15. CHANNEL (∧/∨) buttons
16. POWER button
17. VCR/TV button

To insert the batteries

Install two AA batteries (supplied) matching the polarity indicated on the bottom of the remote control.



Rear Panel



19. AUDIO OUT jack
20. AUDIO IN jack
21. ANT. IN jack
22. ANT. OUT jack
23. VIDEO IN jack
24. VIDEO OUT jack
25. AC Power Cord

VIDEO OUT Jack
Connect a video cable going to the video in jack of a camcorder, another VCR, a TV, or an audio-visual system (laser disc player, video disc player, etc.) here.

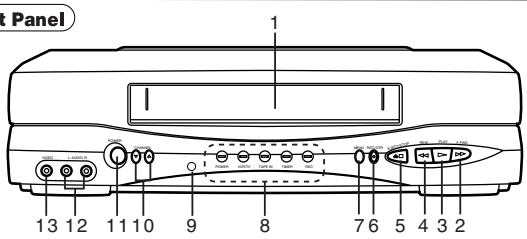
AUDIO OUT Jack
Connect the audio cable going to the audio in jack of a camcorder, another VCR, a stereo amplifier, or an audio system here.

VIDEO IN Jack
Connect a video cable coming from the video out jack of a camcorder, another VCR, or an audio-visual source (laser disc player, video disc player, etc.) here.

AUDIO IN Jack
Connect the audio cable coming from the audio out jack of a camcorder, another VCR, or an

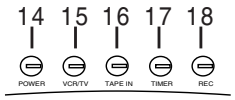
[DCV603]

Front Panel



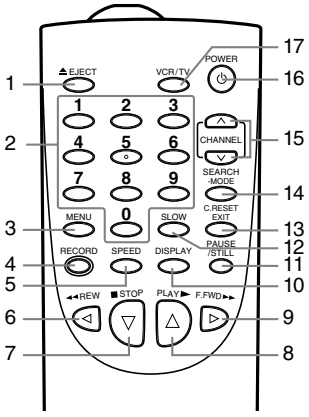
1. Cassette Compartment
2. F.FWD button
3. PLAY button
4. REW button
5. STOP/EJECT button
6. REC/OTR button
7. MENU button
8. Indicators
9. Remote Sensor
10. CHANNEL (▽/△) buttons
11. POWER button
12. AUDIO Input jacks
13. VIDEO Input jack

Indicators



14. POWER indicator
15. VCR/TV indicator
16. TAPE IN indicator
17. TIMER indicator
18. REC indicator

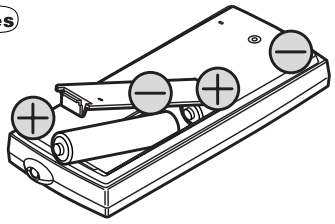
Remote Control



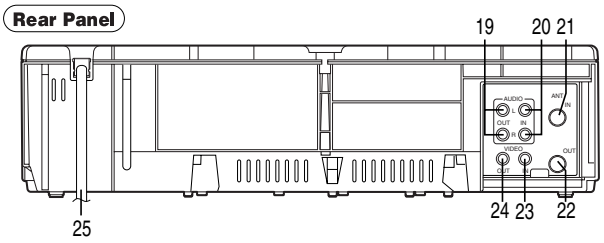
1. EJECT button
2. NUMBER buttons
3. MENU button
4. RECORD button
5. SPEED button
6. REW button
7. STOP button
8. PLAY button
9. F.FWD button
10. DISPLAY button
11. PAUSE/STILL button
12. SLOW button
13. C.RESET/EXIT button
14. SEARCH-MODE button
15. CHANNEL (△/▽) buttons
16. POWER button
17. VCR/TV button

To insert the batteries

Install two AA batteries (supplied) matching the polarity indicated on the bottom of the remote control.



Rear Panel



19. AUDIO OUT jacks
20. AUDIO IN jacks
21. ANT. IN jack
22. ANT. OUT jack
23. VIDEO IN jack
24. VIDEO OUT jack
25. AC Power Cord

VIDEO OUT Jack
Connect a video cable going to the video in jack of a camcorder, another VCR, a TV, or an audio-visual system (laser disc player, video disc player, etc.) here.

AUDIO OUT Jacks
Connect the audio cables going to the audio in jacks of a camcorder, another VCR, a stereo amplifier, or an audio system here.

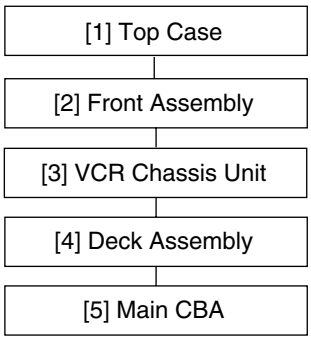
VIDEO IN Jack
Connect a video cable coming from the video out jack of a camcorder, another VCR, or an audio-visual source (laser disc player, video disc player, etc.) here.

AUDIO IN Jacks
Connect the audio cables coming from the audio out jacks of a camcorder, another VCR, or an

CABINET DISASSEMBLY INSTRUCTIONS

1. Disassembly Flowchart

This flowchart indicates the disassembly steps to gain access to item(s) to be serviced. When reassembling, follow the steps in reverse order. Bend, route, and dress the cables as they were originally.



2. Disassembly Method

ID/ LOC. No.	PART	REMOVAL		
		Fig. No.	REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	Note
[1]	Top Case	D1	4(S-1)	-
[2]	Front Assembly	D2	*3(L-1),*4(L-2)	-
[3]	VCR Chassis Unit	D3	5(S-2)	1
[4]	Deck Assembly	D4, D5	3(S-3), Desolder	2,3
[5]	Main CBA	D4, D5	----------	-
↓ (1)	↓ (2)	↓ (3)	↓ (4)	↓ (5)

(1): Identification (location) No. of parts in the figures

(2): Name of the part

(3): Figure Number for reference

(4): Identification of parts to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.
P=Spring, L=Locking Tab, S=Screw,
CN=Connector
*=Unhook, Unlock, Release, Unplug, or Desolder
e.g. 2(S-2) = two Screws (S-2),
2(L-2) = two Locking Tabs (L-2)

(5): Refer to “Reference Notes.”

Reference Notes

CAUTION: Locking Tabs (L-1) and (L-2) are fragile. Be careful not to break them.

1. Remove five Screws (S-2). Then slowly lift the VCR Chassis Unit (Deck Assembly and Main CBA) up.
2. When reassembling, solder wire jumpers as shown in Fig. D4.
3. Before installing the Deck Assembly, be sure to place the pin of LD-SW on Main CBA as shown in Fig. D5. Then, install the Deck Assembly while aligning the hole of Cam Gear with the pin of LD-SW, the shaft of Cam Gear with the hole of LD-SW as shown in Fig. D5.

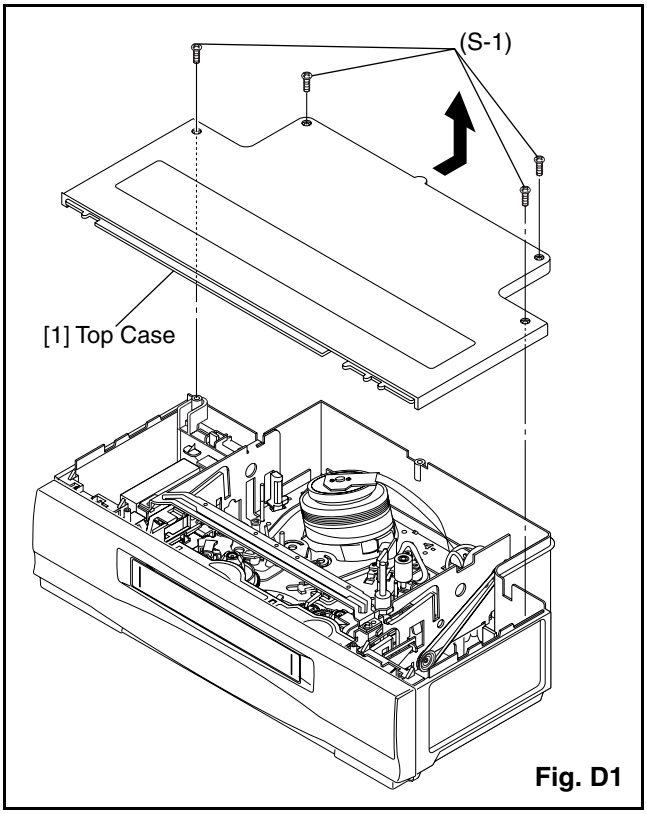


Fig. D1

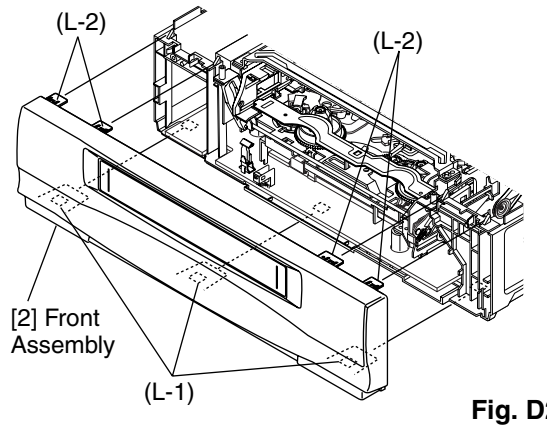


Fig. D2

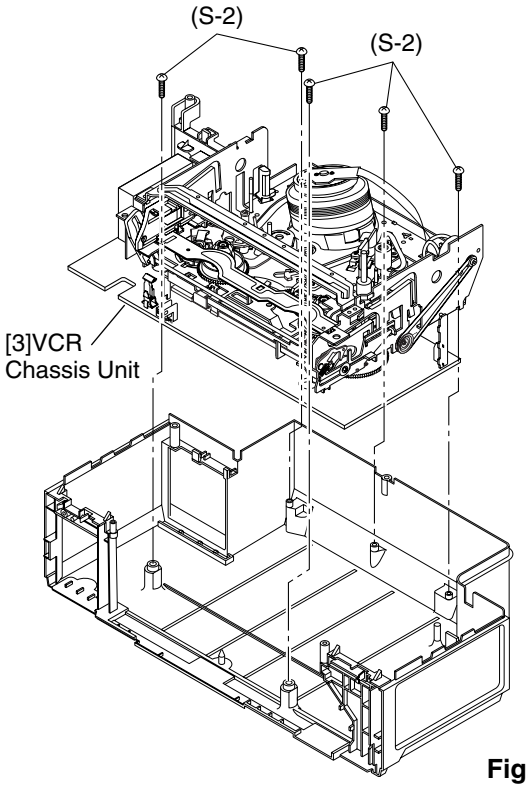
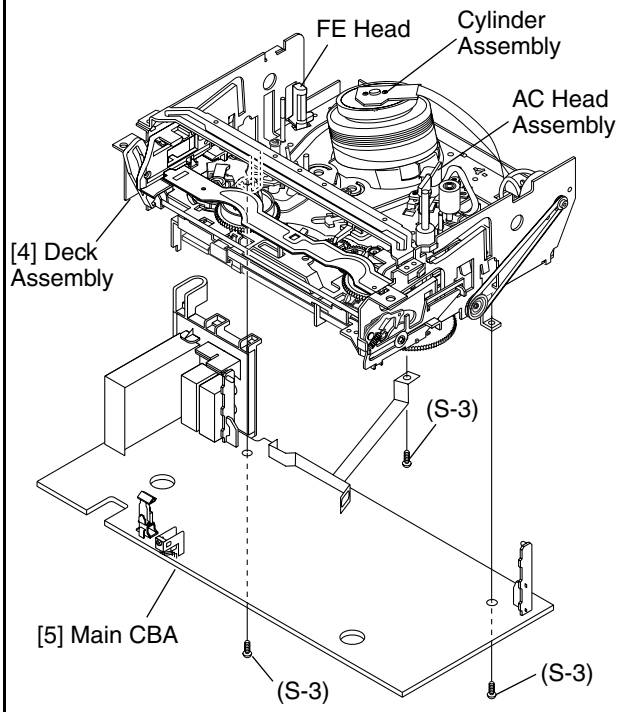
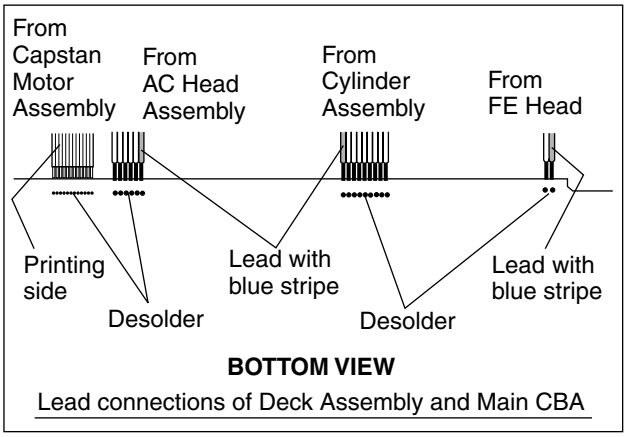


Fig. D3





BOTTOM VIEW

Lead connections of Deck Assembly and Main CBA

Fig. D4

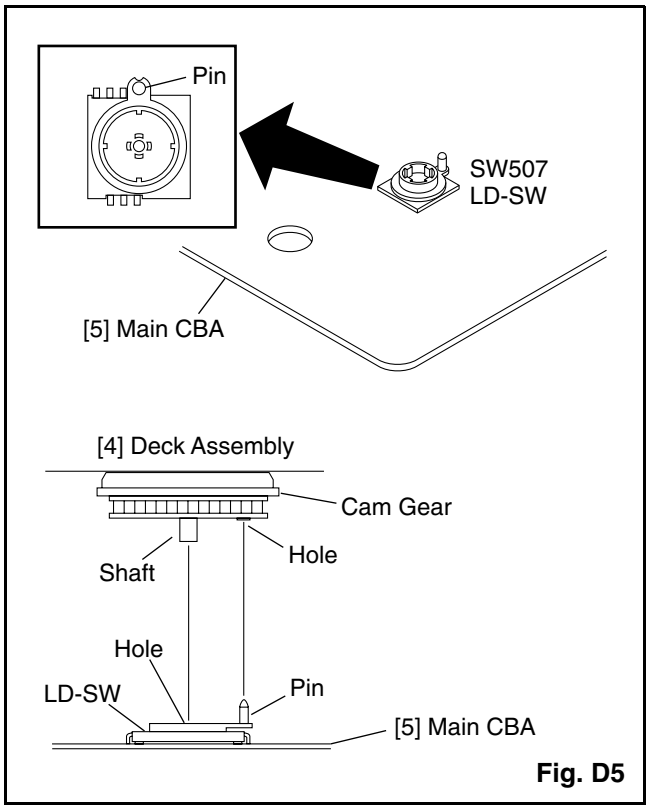

Pin
SW507
LD-SW
[5] Main CBA
[4] Deck Assembly
Cam Gear
Hole
Shaft
Hole
LD-SW
Pin
[5] Main CBA

Fig. D5

ELECTRICAL ADJUSTMENT INSTRUCTIONS

General Note: "CBA" is an abbreviation for "Circuit Board Assembly."

NOTE:

1. Electrical adjustments are required after replacing circuit components and certain mechanical parts. It is important to do these adjustments only after all repairs and replacements have been completed. Also, do not attempt these adjustments unless the proper equipment is available.
2. To perform these alignment / confirmation procedures, make sure that the tracking control is set in the center position: Press either "CHANNEL ▼" or "CHANNEL ▲" button on the front panel first, then the "PLAY" button on the front panel.

Test Equipment Required

1. Oscilloscope: Dual-trace with 10:1 probe,
   V-Range: 0.001~50V/Div.,
   F-Range: DC~AC-20MHz
2. Alignment Tape (FL8A)

Head Switching Position Adjustment

Purpose:

To determine the Head Switching point during playback.

Symptom of Misadjustment:

May cause Head Switching noise or vertical jitter in the picture.

Test point	Adj.Point	Mode	Input
TP751(V-OUT) TP302(RF-SW) GND	VR501 (Switching Point) (MAIN CBA)	PLAY (SP)	-----
Tape	**Measurement Equipment**	**Spec.**	
FL8A	Oscilloscope	6.5H±1H (412.7μs±60μs)	

Connections of Measurement Equipment

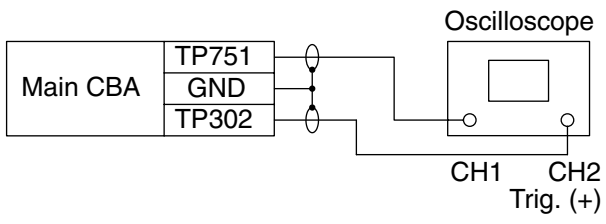
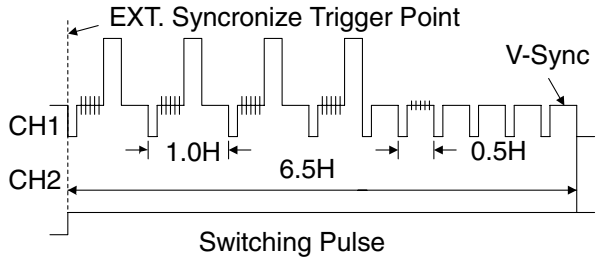
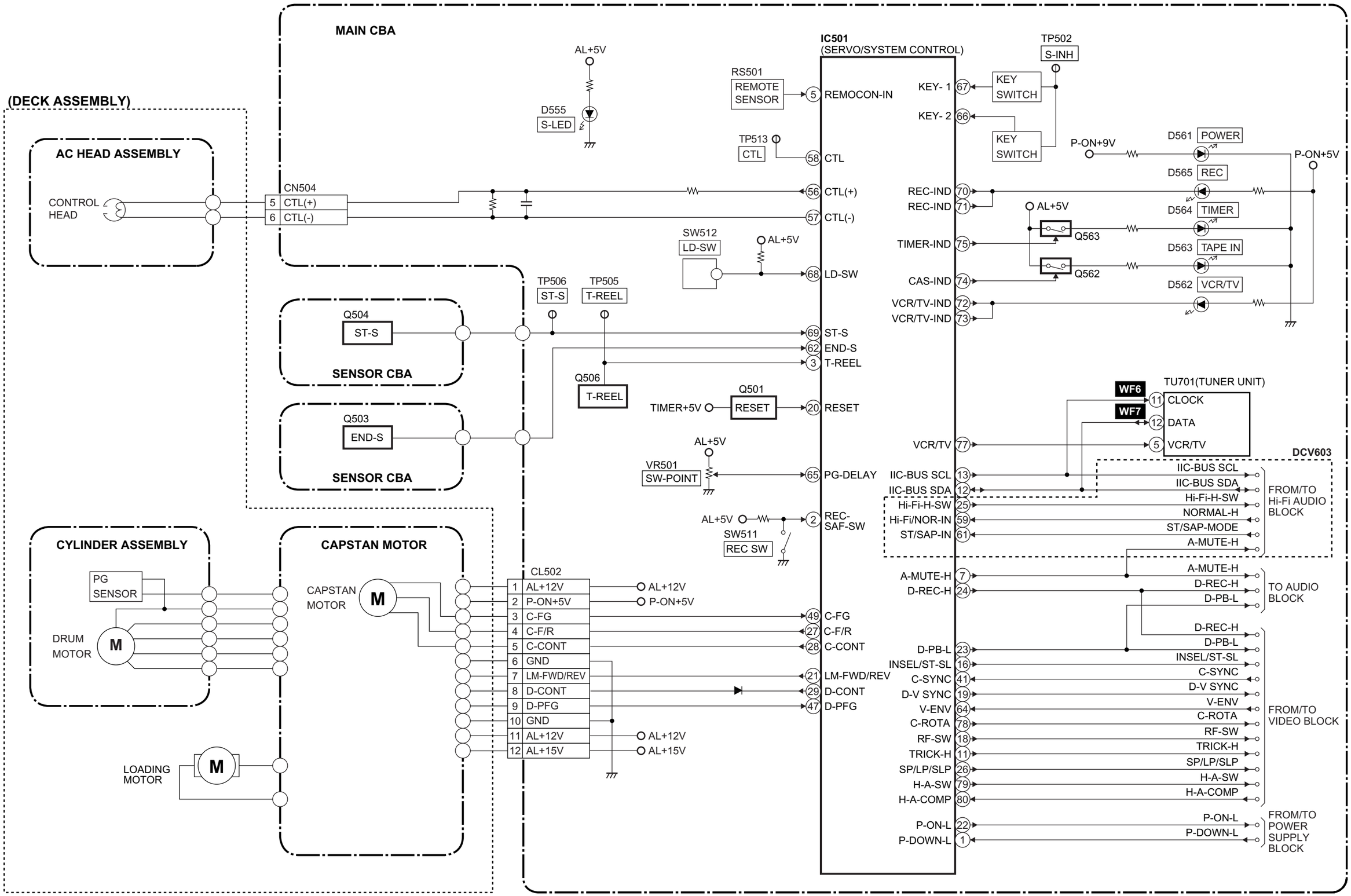


Figure 1



Reference Notes:

Playback the Alignment tape and adjust VR501 so that the V-sync front edge of the CH1 video output waveform is at the 6.5H(412.7μs) delayed position from the rising edge of the CH2 head switching pulse waveform.


(DECK ASSEMBLY)
AC HEAD ASSEMBLY
CONTROL HEAD
CN504
5 CTL(+)
6 CTL(-)
MAIN CBA
AL+5V
D555
S-LED
RS501
REMOTE SENSOR
5 REMOCON-IN
TP513
CTL
58 CTL
56 CTL(+)
57 CTL(-)
SW512
LD-SW
AL+5V
68 LD-SW
TP506
ST-S
TP505
T-REEL
Q504
ST-S
SENSOR CBA
Q503
END-S
SENSOR CBA
Q506
T-REEL
69 ST-S
62 END-S
3 T-REEL
Q501
TIMER+5V
RESET
20 RESET
AL+5V
VR501
SW-POINT
65 PG-DELAY
AL+5V
SW511
REC SW
2 REC-SAF-SW
IC501
(SERVO/SYSTEM CONTROL)
KEY- 1 67
KEY- 2 66
TP502
S-INH
KEY SWITCH
KEY SWITCH
REC-IND 70
REC-IND 71
TIMER-IND 75
CAS-IND 74
VCR/TV-IND 72
VCR/TV-IND 73
P-ON+9V
D561 POWER
D565 REC
D564 TIMER
D563 TAPE IN
D562 VCR/TV
P-ON+5V
AL+5V
Q563
Q562
TU701(TUNER UNIT)
WF6
WF7
11 CLOCK
12 DATA
5 VCR/TV
VCR/TV 77
IIC-BUS SCL 13
IIC-BUS SDA 12
Hi-Fi-H-SW 25
Hi-Fi/NOR-IN 59
ST/SAP-IN 61
DCV603
IIC-BUS SCL
IIC-BUS SDA
Hi-Fi-H-SW
NORMAL-H
ST/SAP-MODE
A-MUTE-H
FROM/TO Hi-Fi AUDIO BLOCK
A-MUTE-H 7
D-REC-H 24
A-MUTE-H
D-REC-H
D-PB-L
TO AUDIO BLOCK
D-PB-L 23
INSEL/ST-SL 16
C-SYNC 41
D-V SYNC 19
V-ENV 64
C-ROTA 78
RF-SW 18
TRICK-H 11
SP/LP/SLP 26
H-A-SW 79
H-A-COMP 80
D-REC-H
D-PB-L
INSEL/ST-SL
C-SYNC
D-V SYNC
V-ENV
C-ROTA
RF-SW
TRICK-H
SP/LP/SLP
H-A-SW
H-A-COMP
FROM/TO VIDEO BLOCK
P-ON-L 22
P-DOWN-L 1
P-ON-L
P-DOWN-L
FROM/TO POWER SUPPLY BLOCK
CYLINDER ASSEMBLY
PG SENSOR
DRUM MOTOR
M
LOADING MOTOR
M
CAPSTAN MOTOR
CAPSTAN MOTOR
M
CL502
1 AL+12V
2 P-ON+5V
3 C-FG
4 C-F/R
5 C-CONT
6 GND
7 LM-FWD/REV
8 D-CONT
9 D-PFG
10 GND
11 AL+12V
12 AL+15V
AL+12V
P-ON+5V
49 C-FG
27 C-F/R
28 C-CONT
21 LM-FWD/REV
29 D-CONT
47 D-PFG
AL+12V
AL+15V

Video Block Diagram

REC VIDEO SIGNAL PB VIDEO SIGNAL MODE: SP/REC

MAIN CBA

WF1
TP751
V-OUT

JK751
V-OUT

Q391
BUFFER

IC501 (OSD)
OSD CHARACTER MIX
38
40

IC301
(VIDEO SIGNAL PROCESS/ HEAD AMP)
35

TU701
(TUNER UNIT)
VIDEO-IN 6
VIDEO-OUT 18
WF5
WF9

6dB AMP
CHARA MIX
FBC

45
47
CCD 1H DELAY
49
Q301
BUFFER
44

DOC YNR Y/C COMB
LUMINANCE SIGNAL PROCESS
CHROMINANCE SIGNAL PROCESS
Y/C MIX

42 TUNER
38 REAR
40 FRONT
V-AGC
R P

JK752
REAR V-IN

JK753
FRONT V-IN

INSEL/ST-SL 71
D-PB-L 16 REC/EE/PB
D-REC-H 11 D-REC-H
TRICK-H 73 TRICK-H
C-SYNC 34
C-ROTA 14 C-ROTA
D-V SYNC 39 D-V SYNC
SP/LP/SLP 59 SP/LP/SLP

FROM/TO
SERVO/SYSTEM
CONTROL BLOCK

SYNC SEPA
R
P

AGC AMP

(DECK ASSEMBLY)

VIDEO (R)-1 HEAD
VIDEO (L)-1 HEAD
VIDEO (L)-2 HEAD
VIDEO (R)-2 HEAD
DCV603

CYLINDER ASSEMBLY

CL253
1 V(R)-1
2 V-COM
3 V(L)-1
4 V(L)-2
5 V-COM
6 V(R)-2

91
90
89
88
85
84
83
82

R
L
SP
EP
L
R
HPF
ENV DET
R
P

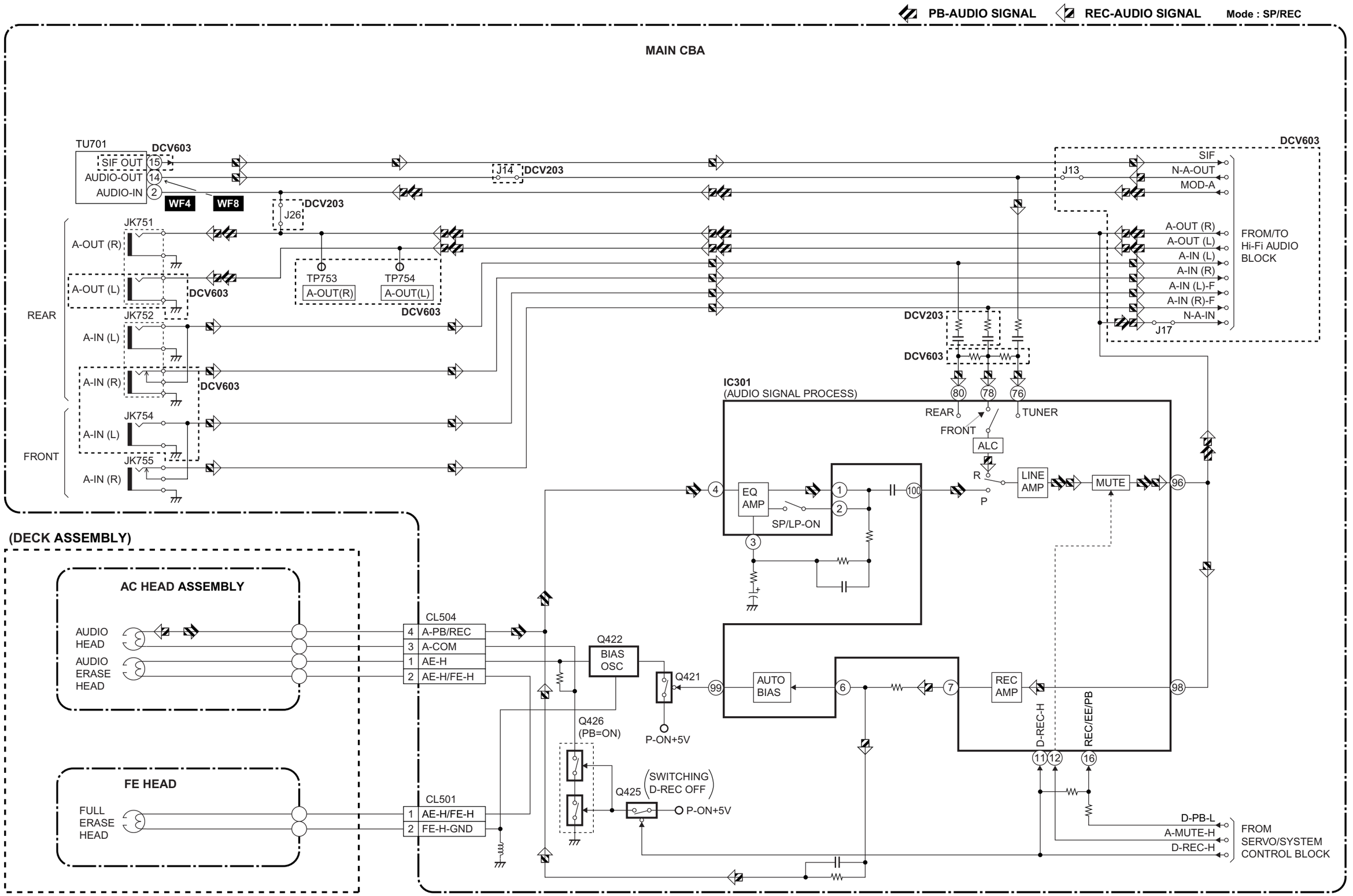
74
TP301
C-PB
WF3

TP302
WF2 RF-SW

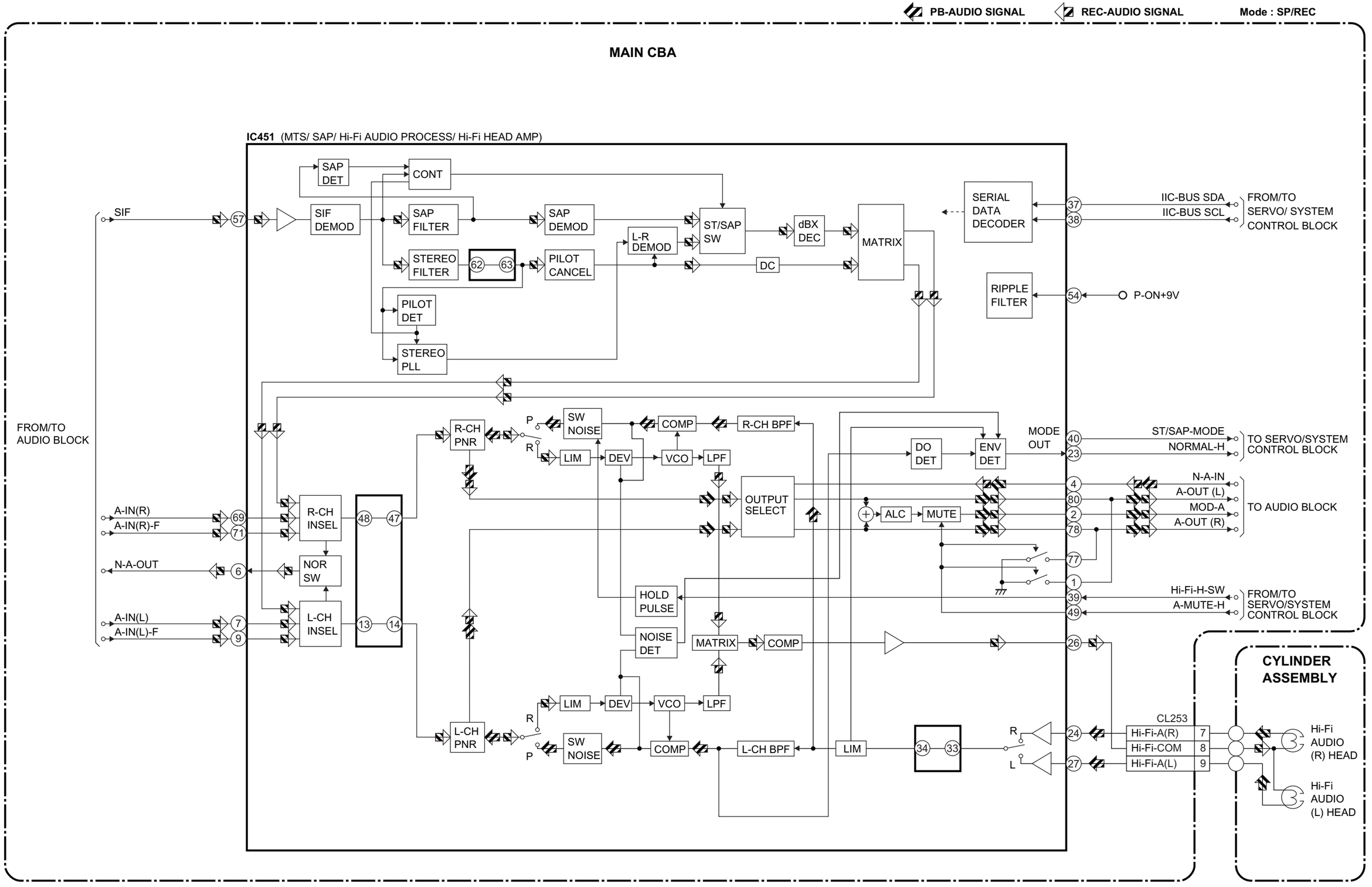
FROM/TO
SERVO/SYSTEM
CONTROL BLOCK

RF-SW 13
V-ENV 93
H-A-SW 15
H-A-COMP 94
H-A-COMP

Audio Block Diagram



Hi-Fi Audio Block Diagram (DCV603)

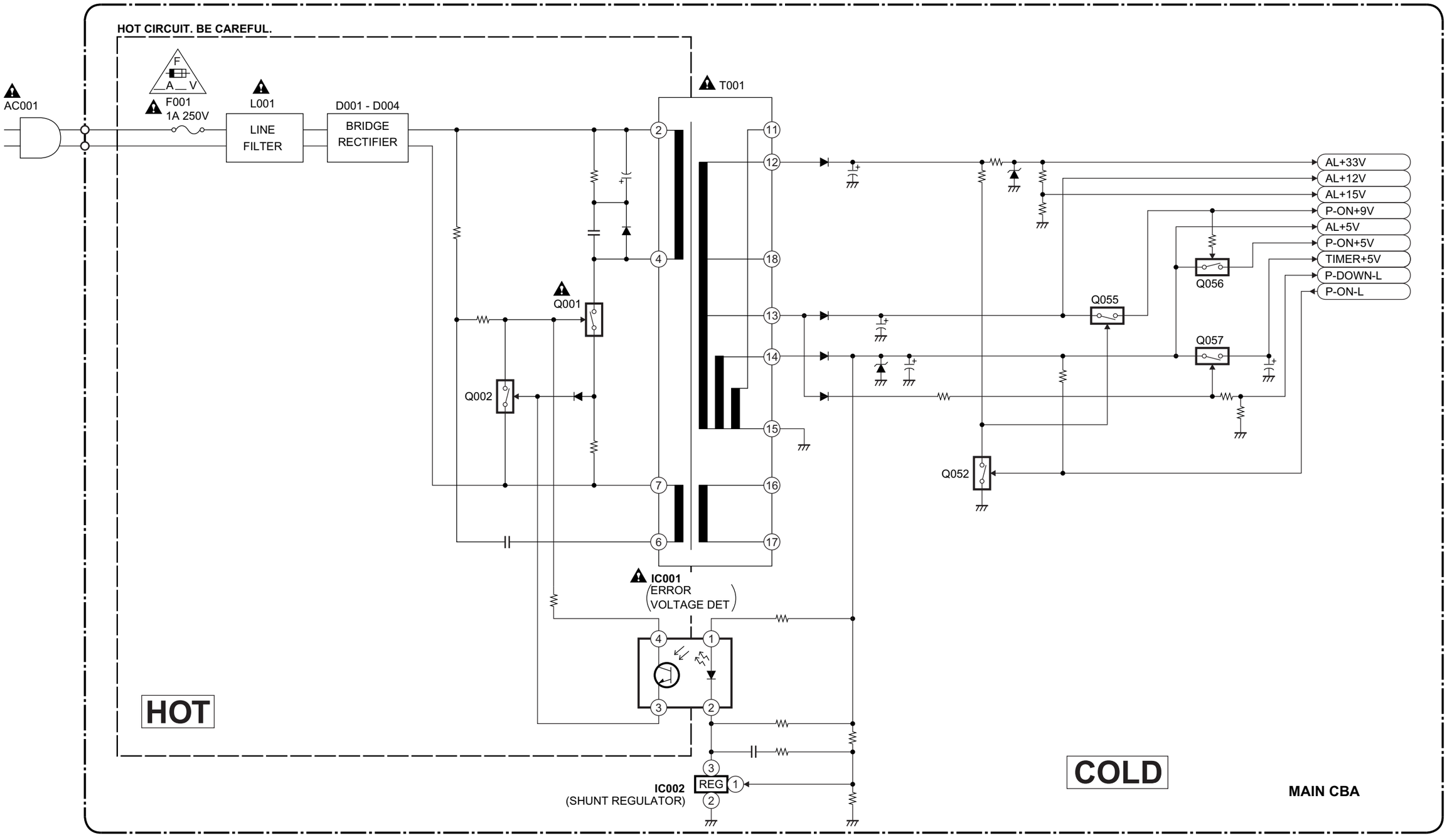


Power Supply Block Diagram

NOTE :
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

CAUTION
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQES D'INCELE N'UTILISER QUE DES FUSIBLE DE MÊME TYPE.
RISK OF FIRE -REPLACE FUSE AS MARKED.
"This symbol means fast operating fuse."
"Ce symbole reprèsente un fusible à fusion rapide."

CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit. If Main Fuse (F001) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.



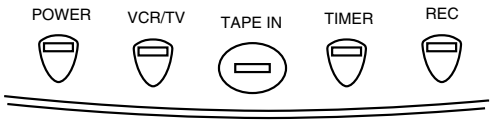
FUNCTION INDICATOR SYMBOLS

Note:

The following symbols will appear on the indicator panel to indicate the current mode or operation of the VCR. On-screen modes will also be momentarily displayed on the tv screen when you press the operation buttons.

Display panel

[DCV203]



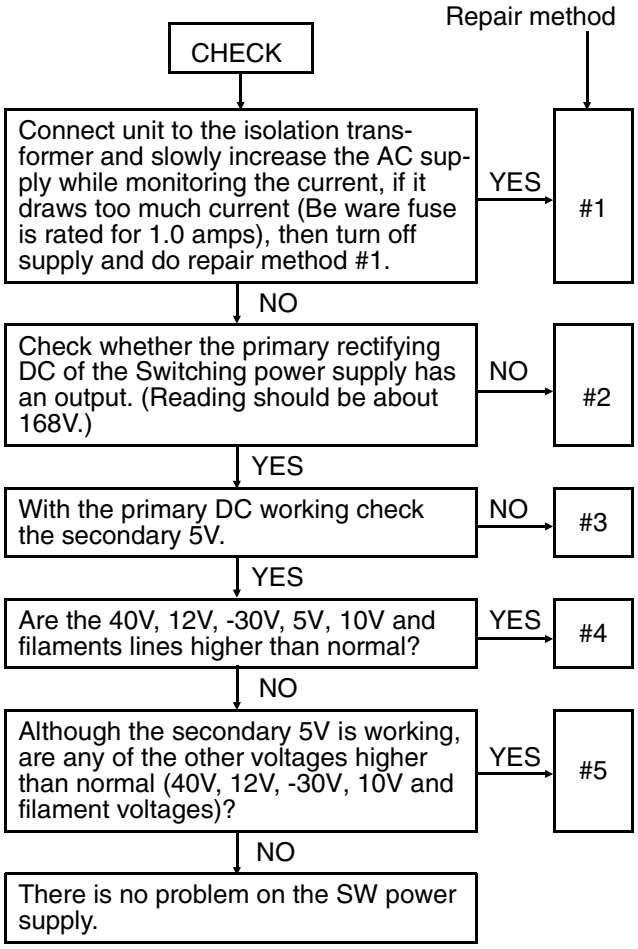
[DCV603]

" H "= LED Light on, " L "= LED Light off

Led Mode	Indicator Active
POWER	Power on = " H " Power off = " L "
VCR/TV	VCR mode = " H " TV mode = " L "
TAPE IN	Cassette in = " H " Cassette out = " L "
1. When reel and capstan mechanism is not functioning correctly	Cassette in — Blinks at 0.8Hz interval
2. When tape loading mechanism is not functioning correctly	Cassette in — Blinks at 1.6Hz interval
3. When cassette loading mechanism is not functioning correctly	Cassette in — Blinks at 3.2Hz interval
4. When the drum is not working properly	Cassette in — Blinks at 6.4Hz interval
TIMER	Timer stand by = " H " One touch recording = " H " Timer recording = " H " General mode = " L "
REC	REC mode = " H " REC pause — Blinks at 0.8Hz interval General mode = " L "

Power Supply Trouble Shooting Guide

It is highly recommended that a variable isolation transformer which can monitor current be used. (Alternatively a variable AC source which monitors current will do). Read directions below before power is added!


Repair method
CHECK
Connect unit to the isolation transformer and slowly increase the AC supply while monitoring the current, if it draws too much current (Be ware fuse is rated for 1.0 amps), then turn off supply and do repair method #1.
YES
#1
NO
Check whether the primary rectifying DC of the Switching power supply has an output. (Reading should be about 168V.)
NO
#2
YES
With the primary DC working check the secondary 5V.
NO
#3
YES
Are the 40V, 12V, -30V, 5V, 10V and filaments lines higher than normal?
YES
#4
NO
Although the secondary 5V is working, are any of the other voltages higher than normal (40V, 12V, -30V, 10V and filament voltages)?
YES
#5
NO
There is no problem on the SW power supply.

Repair method #1

(Power must be off)
Short circuit in the secondary side. check diode D013, D020 and {(FIP display model only: D012, D015, D016 and D017) or (LED display model only: D015 and D016)}, switching FET (Q001), control transistor (Q002), diode (D006), and resistor (R014) replace as necessary.
Disconnect 40V diode (D013), 12V diode (D015), 5V diode (D016), 10V diode (D020) and {FIP display model only: -30V diode (D012) and filament voltage diode (D017)} Check the load continuity of 40V line, 12V line, 5V line, -30V line, 10V line and filament voltage line through a tester (resistance range).
If the tester indicates a lower resistance value around 0 ohm, the line is short-circuited.
Before repairing the switching power supply, find out the short-circuited area of such line and repair it.
If the tester does not indicate any low resistance value (around 0 ohm), no load is short-circuited and there is no problem.

2] Check for any defective parts while the secondary rectifying diodes are disconnected (D013, D015, D016, D020 and {FIP display model only: D012 and D017)} perform a diode check in both forward and reverse directions through a tester.

3] Remove the following components and check for defects: snubber diode (D051), switching FET (Q001), source resistor (R014), control transistor (Q002).

Repair method #2

Check the fuse 1.0A (F001), primary rectifying diodes (D001-D004) as possible problems. Remove the above mentioned parts and check them. The circuit which turns on switching FET (Q001) may be regarded as a possible cause, even if the load at the secondary side is shorted, it can't be detected because switching FET (Q001) isn't operating. Perform check according to the step 1 and 2 of repair method #1 and check the following parts:
(Remove the part from PCB)
Switching FET (Q001), source resistor (R014), gate resistor (R008) and start resistor (R004 and R005).

Repair method #3

A circuit to turn on switching FET (Q001) may not work and this may be regarded as a cause of trouble. Even if the load at the secondary side is short-circuited, it cannot be detected because switching FET (Q001) does not turn on. Therefore, perform check according to the steps 1] and 2] of the repair method #1 and execute the under-mentioned parts breakage check.
(Remove the part from PCB.)
switching FET (Q001), source resistor (R014), control shunt regulator (IC002), gate resistor (R008) and start resistor (R004 and R005).

Repair method #4

The feedback circuit which is monitored by the output of voltage may not work and this may be regarded as a possible cause, remove control transistor Q002 and check for defects. More over, a photo coupler (IC001) and transistor (Q031) may be defective, replace any defective parts with factory originals.

Repair method #5

If the output voltage of the secondary side is slightly high, the line load may be in the "OPEN" state and this may be regarded as a cause of trouble. If there is no output voltage on the secondary side, the rectifying diodes (D013), (D015), (D020) and {FIP display model only: (D012) and (D017)} may be defective.

SCHEMATIC DIAGRAMS / CBA'S AND TEST POINTS

Standard Notes

WARNING

Many electrical and mechanical parts in this chassis have special characteristics. These characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the mark " ⚠ " in the schematic diagram and the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts that do not have the same safety characteristics as specified in the parts list may create shock, fire, or other hazards.

Notes:

1. Do not use the part number shown on these drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since these drawings were prepared.
2. All resistance values are indicated in ohms ($K=10^3$, $M=10^6$).
3. Resistor wattages are 1/4W or 1/6W unless otherwise specified.
4. All capacitance values are indicated in μF ($P=10^{-6}$ μF).
5. All voltages are DC voltages unless otherwise specified.

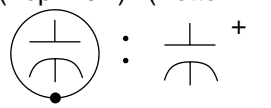
Capacitor Temperature Markings

Mark	Capacity change rate	Standard temperature	Temperature range
(B)	±10%	20°C	-25~+85°C
(F)	+30 - 80%	20°C	-25~+85°C
(SR)	±15%	20°C	-25~+85°C
(Z)	+30 - 80%	20°C	-10~+70°C

Capacitors and transistors are represented by the following symbols.

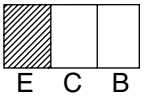
CBA Symbols

(Top View) (Bottom View)



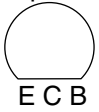
Electrolytic Capacitor

(Bottom View)



Transistor or Digital Transistor

(Top View)



NPN Transistor

(Top View)

PNP Transistor

(Top View)

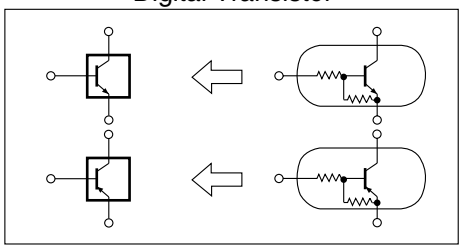
NPN Digital Transistor

(Top View)

PNP Digital Transistor

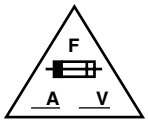
Schematic Diagram Symbols

Digital Transistor



LIST OF CAUTION, NOTES, AND SYMBOLS USED IN THE SCHEMATIC DIAGRAMS ON THE FOLLOWING PAGES:

1. CAUTION:



FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQES D'INCELE N'UTILISER QUE DES FUSIBLE DE MEMO TYPE.
RISK OF FIRE-REPLACE FUSE AS MARKED.

This symbol means fast operating fuse.
Ce symbole reprèsente un fusible à fusion rapide.

2. CAUTION:

Fixed Voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F001) is blown, first check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

3. Note:

(1) Do not use the part number shown on the drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since the drawings were prepared.

(2) To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list section of the service manual.

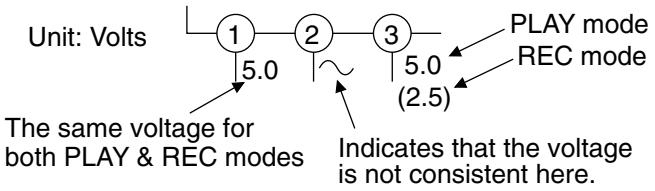
4. Wire Connectors

(1) Prefix symbol "CN" means "connector" (can disconnect and reconnect).

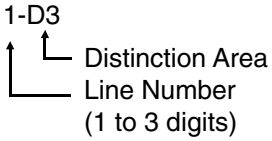
(2) Prefix symbol "CL" means "wire-solder holes of the PCB" (wire is soldered directly).

5. Mode: SP/REC

6. Voltage indications for PLAY and REC modes on the schematics are as shown below:

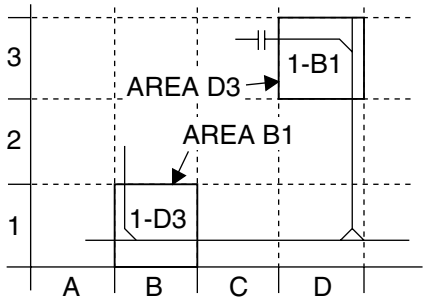


7. How to read converged lines



Examples:

1. "1-D3" means that line number "1" goes to area "D3".
2. "1-B1" means that line number "1" goes to area "B1".



8. Test Point Information

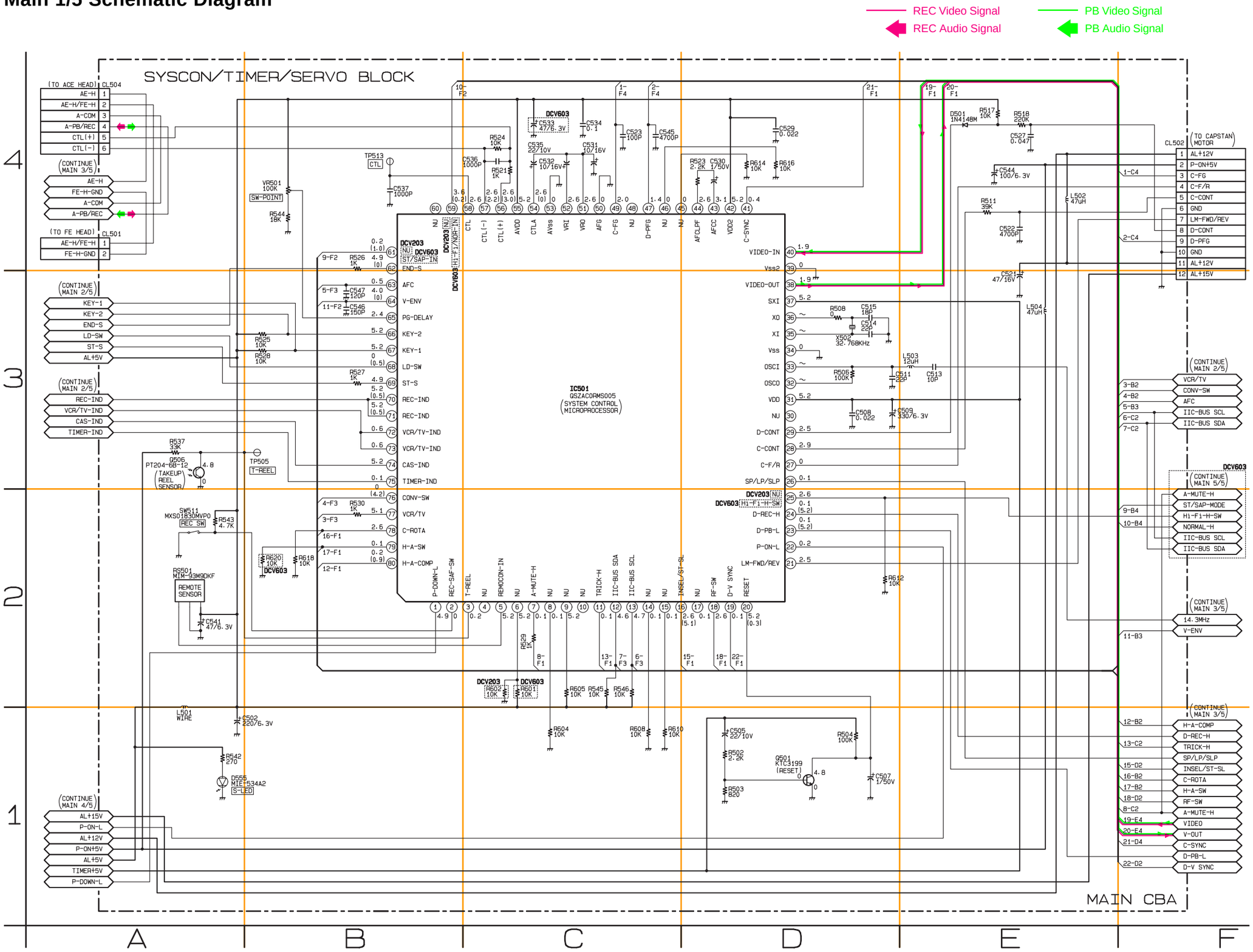
: Indicates a test point with a jumper wire across a hole in the PCB.

: Used to indicate a test point with a component lead on foil side.

: Used to indicate a test point with no test pin.

: Used to indicate a test point with a test pin.

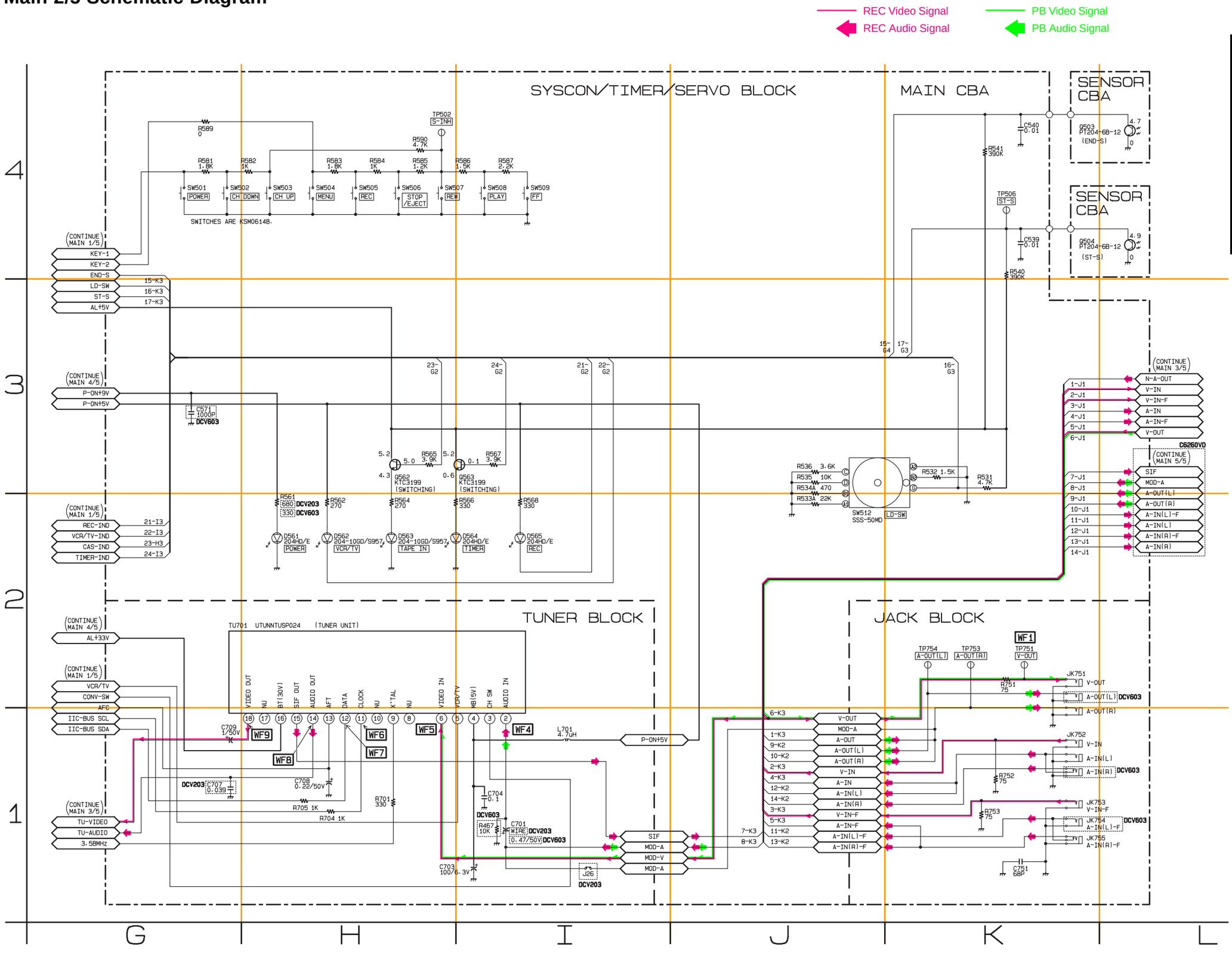
Main 1/5 Schematic Diagram



MAIN 1/5 Schematic Diagram
Parts Location Guide

Ref No.	Position
ICS	
IC501	C-3
COILS	
L501	A-1
L502	E-4
L503	E-3
L504	E-3
TRANSISTORS	
Q501	D-1
Q506	A-3
TEST POINTS	
TP505	B-3
TP513	B-4

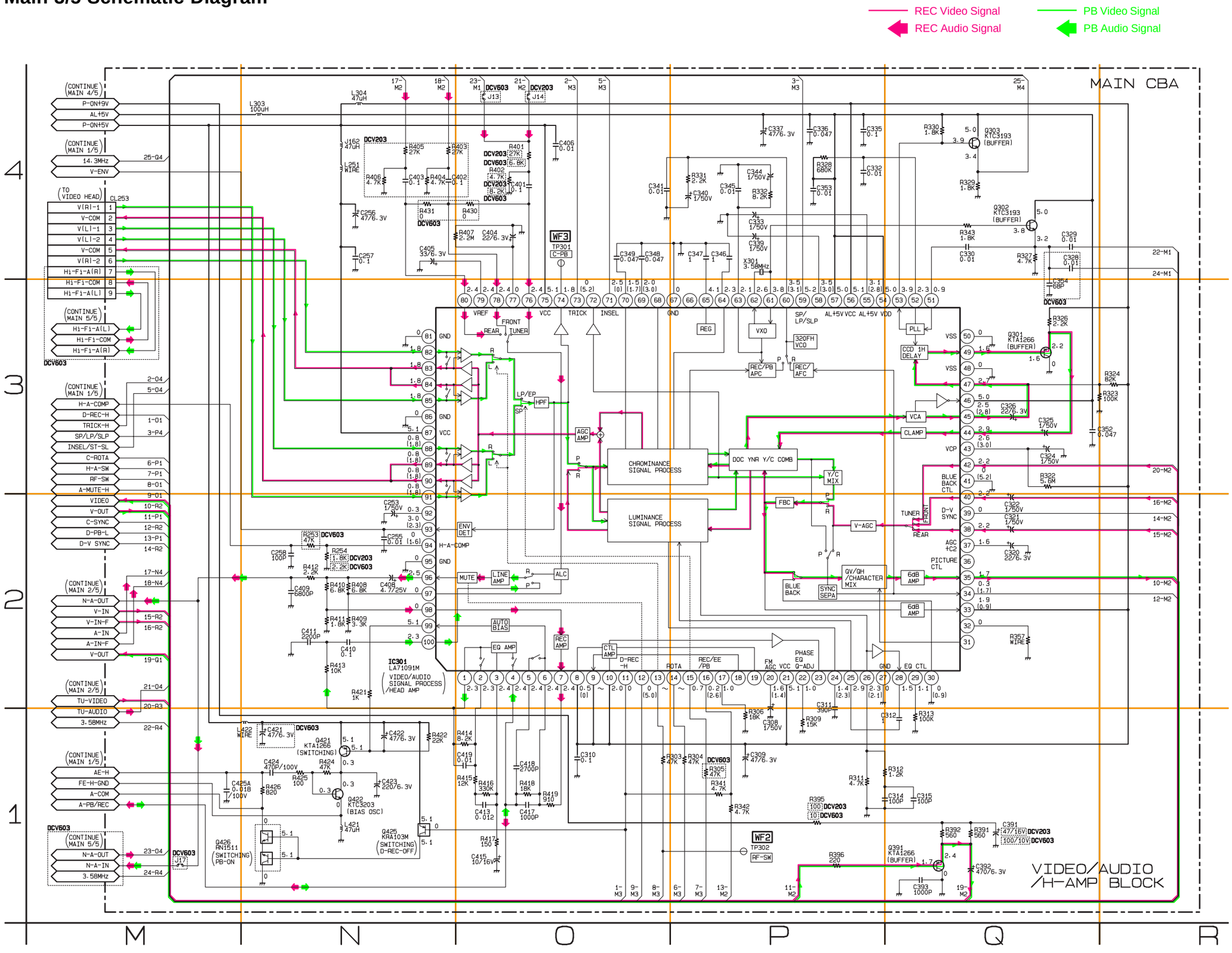
Main 2/5 Schematic Diagram



MAIN 2/5 Schematic Diagram
Parts Location Guide

Ref No.	Position
COILS	
L701	I-1
TRANSISTORS	
Q503	K-4
Q504	K-4
Q562	H-3
Q563	I-3
TEST POINTS	
TP502	H-4
TP506	K-4
TP751	K-2
TP753	K-2
TP754	K-2

Main 3/5 Schematic Diagram



MAIN 3/5 Schematic Diagram
Parts Location Guide

Ref No.	Position
ICS	
IC301	N-2
COILS	
L251	N-4
L303	N-4
L304	N-4
L421	N-1
L422	N-1
TRANSISTORS	
Q301	Q-3
Q302	Q-4
Q303	Q-4
Q391	Q-1
Q421	N-1
Q422	N-1
Q425	N-1
Q426	M-1
TEST POINTS	
TP301	O-4
TP302	P-1

Main 4/5 Schematic Diagram

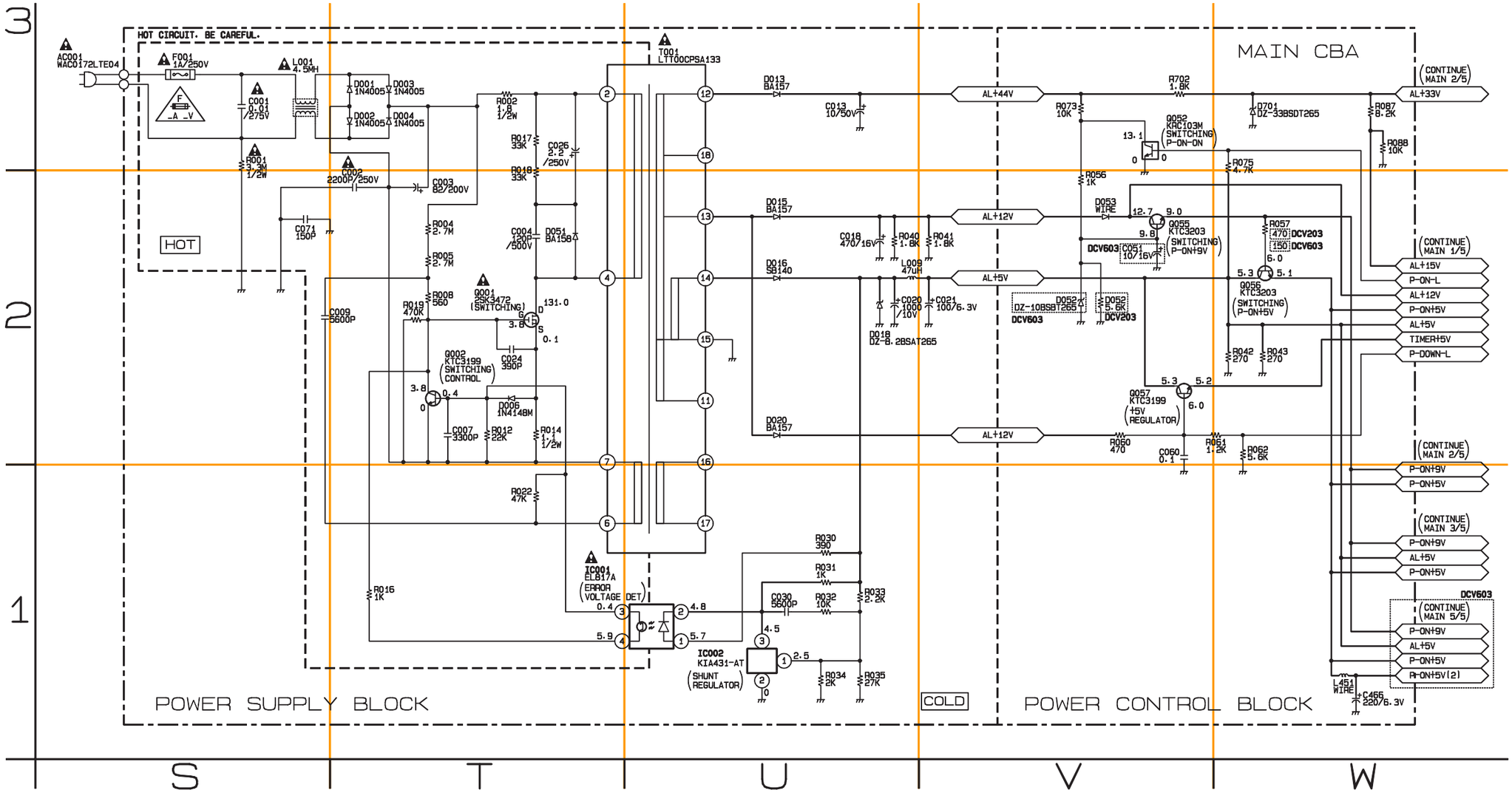
CAUTION
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQES
D'INCELE N'UTILISER QUE DES FUSIBLE DE MÊME TYPE.
RISK OF FIRE-REPLACE FUSE AS MARKED.
"This symbol means fast operating fuse."
"Ce symbole représente un fusible à fusion rapide."

CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

NOTE :
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

MAIN 4/5 Schematic Diagram
Parts Location Guide

Ref No.	Position
ICS	
IC001	T-1
IC002	U-1
COILS	
L001	S-3
L009	U-2
L451	W-1
TRANSISTORS	
Q001	T-2
Q002	T-2
Q052	V-3
Q055	V-2
Q056	W-2
Q057	V-2



Main 5/5 Schematic Diagram (DCV603)

REC Video Signal
REC Audio Signal
PB Video Signal
PB Audio Signal

MAIN CBA Hi-Fi BLOCK

IC451
LA72670M
(MTS/SAP/Hi-Fi AUDIO PROCESS
/Hi-Fi HEAD AMP)

MAIN 5/5 Schematic Diagram
Parts Location Guide

Ref No.	Position
ICS	
IC451	X-2
COILS	
L452	AA-4
TEST POINTS	
TP452	AA-3

Main CBA Top View

CAUTION
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D'INCELE N'UTILISER QUE DES FUSIBLE DE MÊME TYPE.
RISK OF FIRE-REPLACE FUSE AS MARKED.
"This symbol means fast operating fuse."
"Ce symbole reprèsente un fusible à fusion rapide."

CAUTION !
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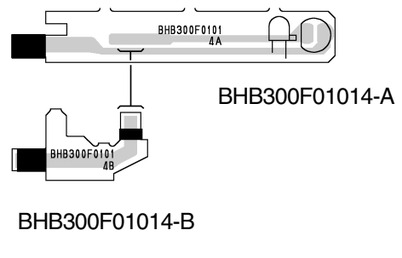
If Main Fuse (F1001) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

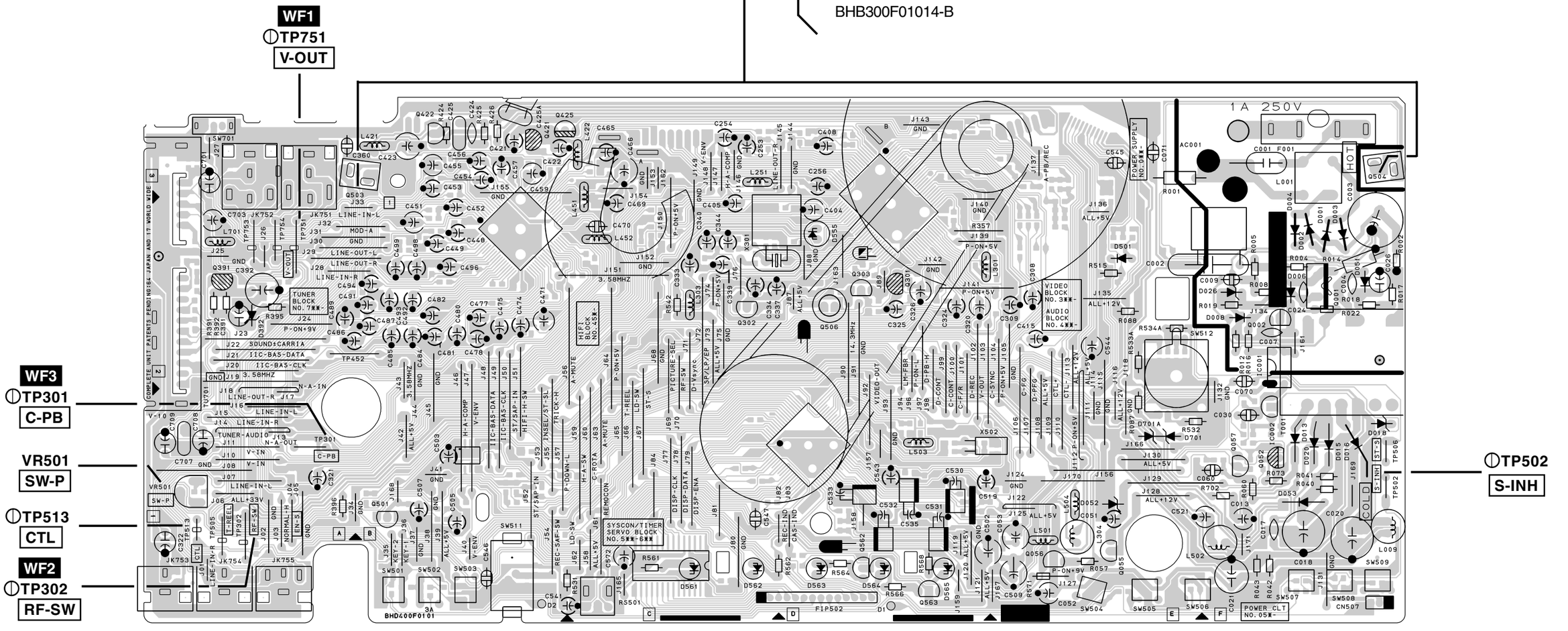
NOTE :
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

BECAUSE A HOT CHASSIS GROUND IS PRESENT IN THE POWER SUPPLY CIRCUIT , AN ISOLATION TRANSFORMER MUST BE USED. ALSO , IN ORDER TO HAVE THE ABILITY TO INCREASE THE INPUT SLOWLY , WHEN TROUBLESHOOTING THIS TYPE POWER SUPPLY CIRCUIT , A VARIABLE ISOLATION TRANSFORMER IS REQUIRED.

NOTE :
Either BHD400F01013, BHD400F01014
is used for the Main CBA in this S/M.

Sensor CBA Top View





Main CBA Bottom View

CAUTION
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ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQES
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RISK OF FIRE-REPLACE FUSE AS MARKED.
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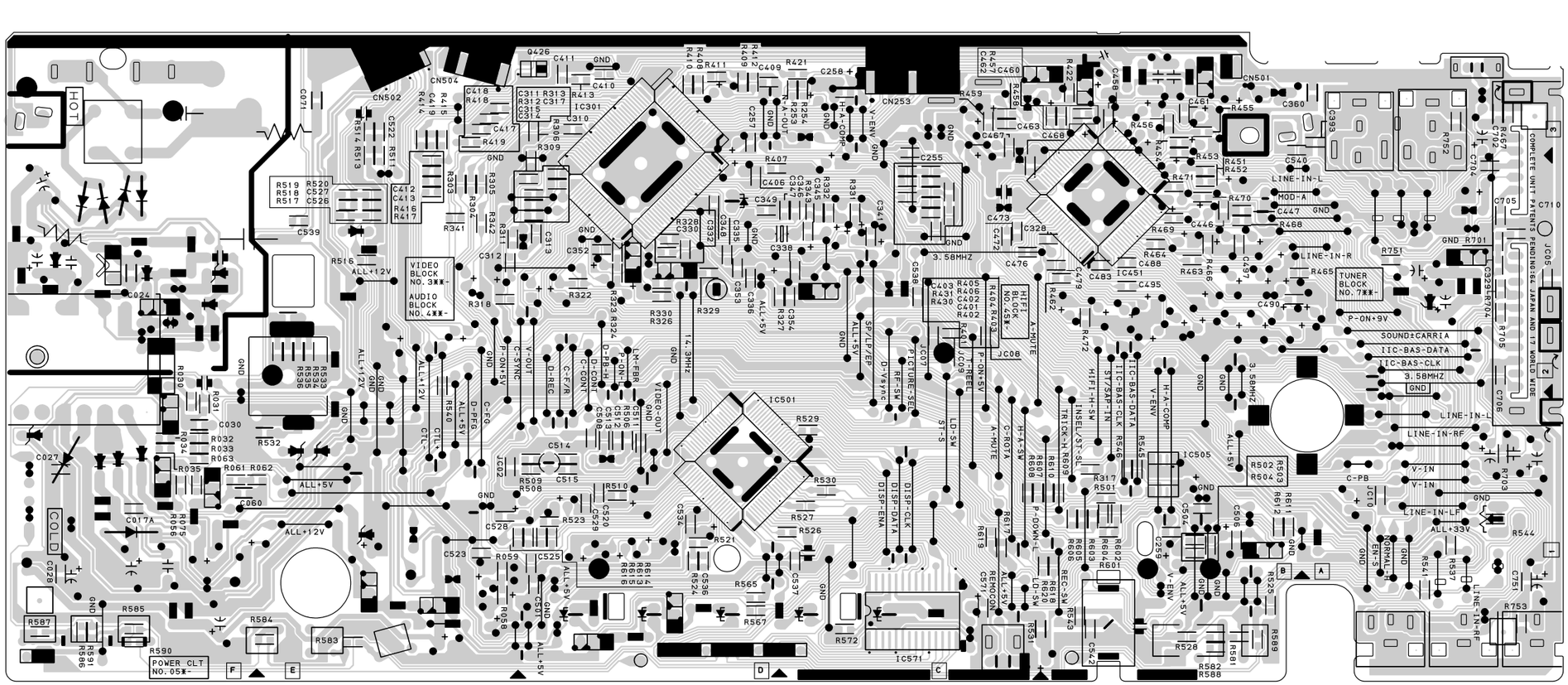

MAIN CBA Parts Location Guide

Ref No.	Position
ICS	
IC001	F-2
IC002	F-1
IC301	D-3
IC451	B-2
IC501	D-2
COILS	
L001	F-3
L009	F-1
L251	C-3
L303	C-2
L304	E-1
L421	B-3
L422	C-3
L451	C-2
L452	C-2
L501	E-1
L502	E-1
L503	D-1
L504	E-1
L701	A-2
TRANSISTORS	
Q001	F-2
Q002	F-2
Q052	F-1
Q055	E-1
Q056	E-1
Q057	F-1
Q301	D-2
Q302	C-2
Q303	D-2
Q391	A-2
Q421	B-3
Q422	B-3
Q425	B-3
Q426	D-3
Q501	B-1
Q503	A-3
Q504	F-3
Q506	D-2
Q562	D-1
Q563	D-1
TEST POINTS	
TP301	A-1
TP302	A-1
TP452	A-2
TP502	F-1
TP505	A-1
TP506	F-1
TP513	A-1
TP751	A-2
TP753	A-2
TP754	A-1

Main CBA Top View

CAUTION
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NOTE :
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NOTE :
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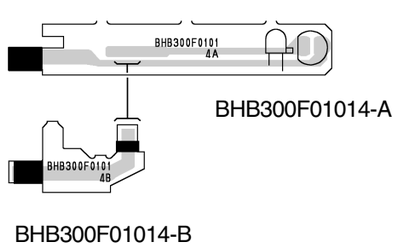
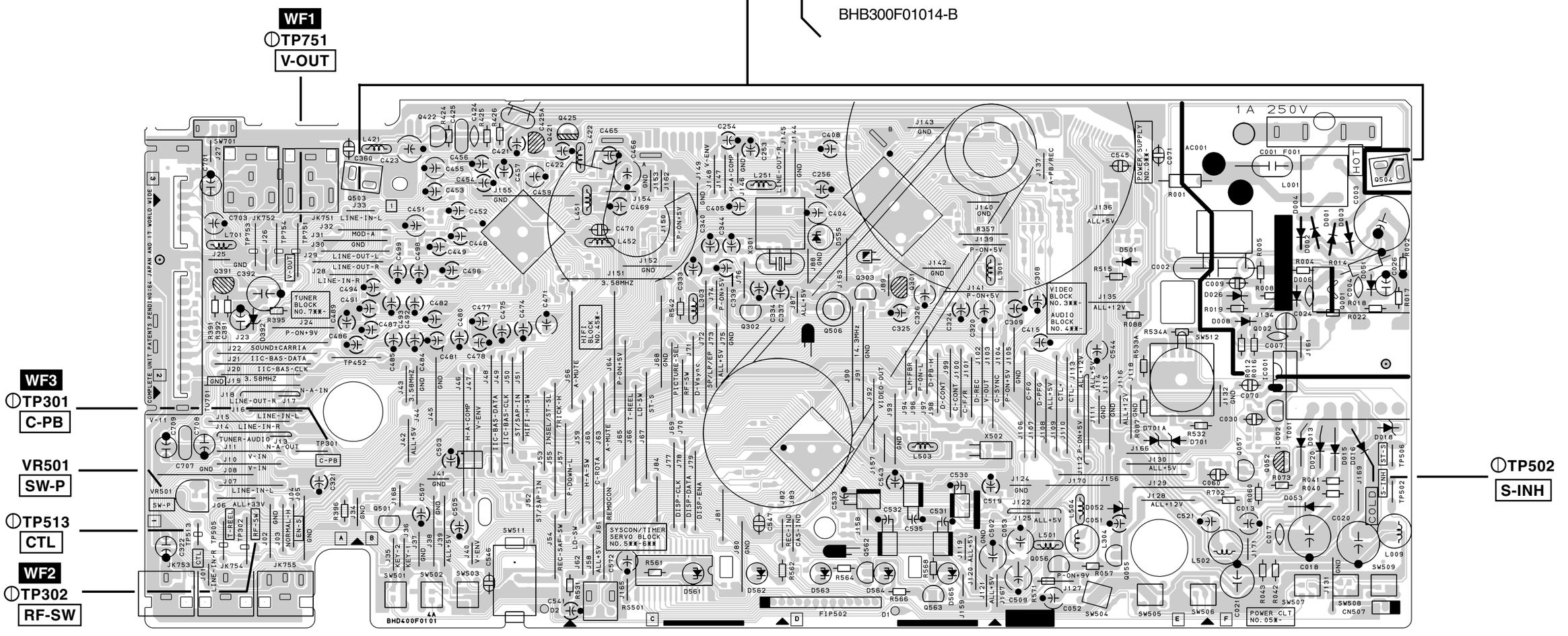
is used for the Main CBA in this S/M.

Sensor CBA Top View





Main CBA Bottom View

CAUTION
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQES
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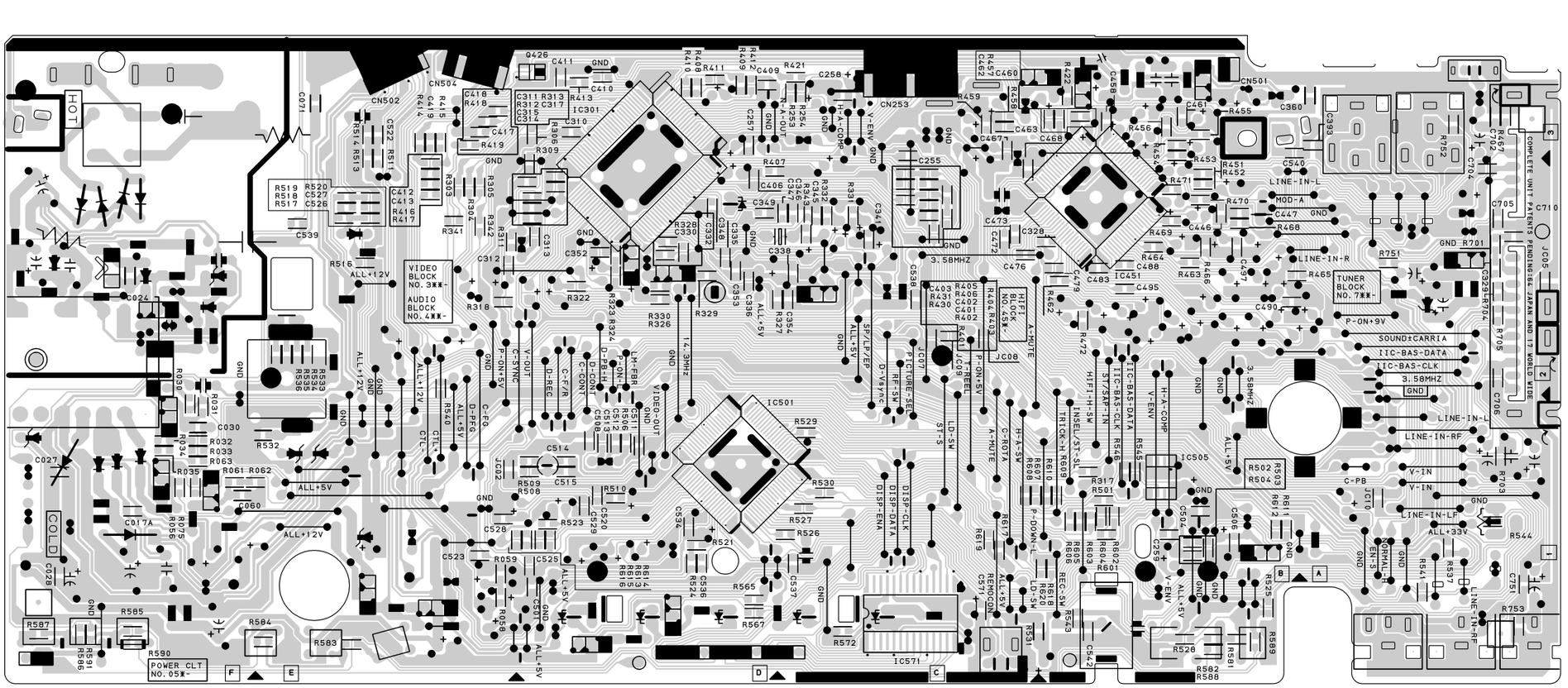
NOTE :
Either BHD400F01013, BHD400F01014 is used for the Main CBA in this S/M.

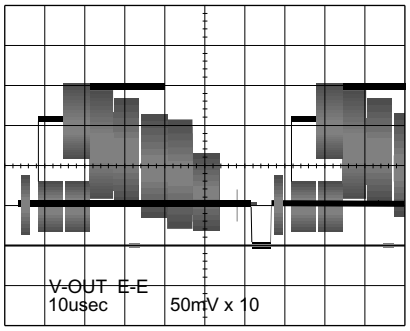


MAIN CBA Parts Location Guide

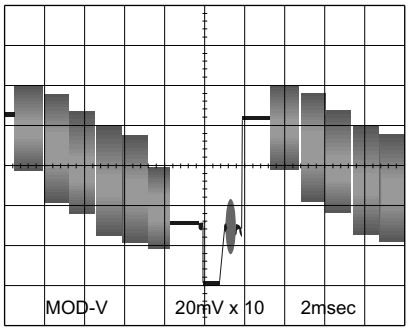
Ref No.	Position
ICS	
IC001	F-2
IC002	F-1
IC301	D-3
IC451	B-2
IC501	D-2
COILS	
L001	F-3
L009	F-1
L251	C-3
L303	C-2
L304	E-1
L421	B-3
L422	C-3
L451	C-2
L452	C-2
L501	E-1
L502	E-1
L503	D-1
L504	E-1
L701	A-2
TRANSISTORS	
Q001	F-2
Q002	F-2
Q052	F-1
Q055	E-1
Q056	E-1
Q057	F-1
Q301	D-2
Q302	C-2
Q303	D-2
Q391	A-2
Q421	B-3
Q422	B-3
Q425	B-3
Q426	D-3
Q501	B-1
Q503	A-3
Q504	F-3
Q506	D-2
Q562	D-1
Q563	D-1
TEST POINTS	
TP301	A-1
TP302	A-1
TP452	A-2
TP502	F-1
TP505	A-1
TP506	F-1
TP513	A-1
TP751	A-2
TP753	A-2
TP754	A-1

WAVEFORMS

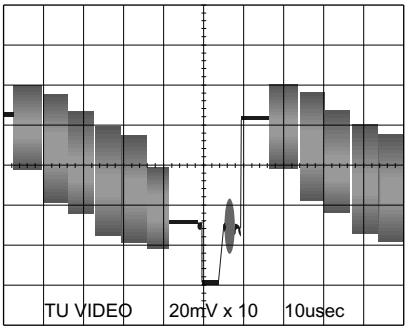
WF1 (TP751 of Main CBA)



WF5 (Pin 6 of TU701)

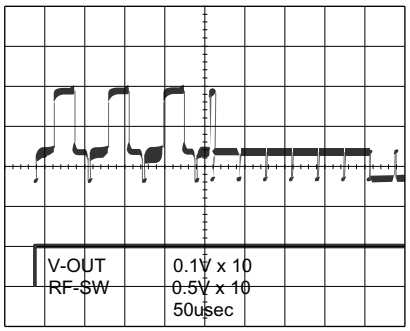


WF9 (Pin 18 of TU701)

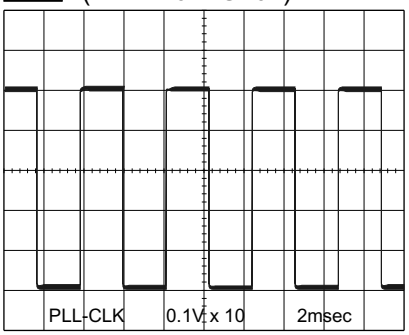


WF1 UPPER (TP751 of Main CBA)

WF2 LOWER (TP302 of Main CBA)

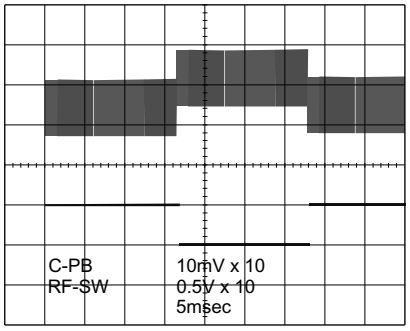


WF6 (Pin 11 of TU701)

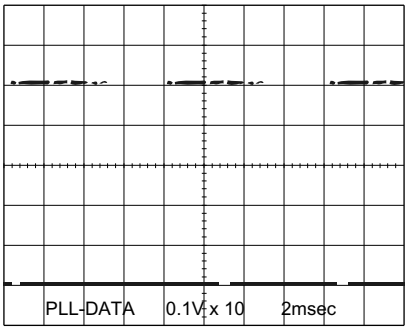


WF3 UPPER (TP301 of Main CBA)

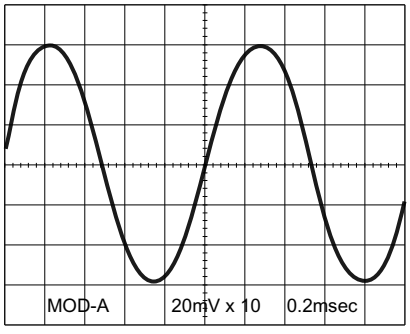
WF2 LOWER (TP302 of Main CBA)



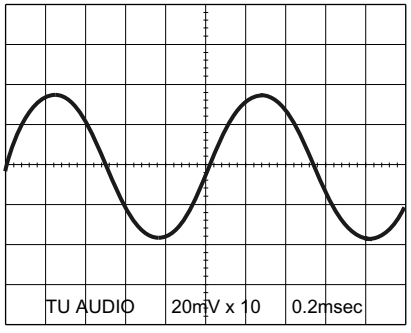
WF7 (Pin 12 of TU701)



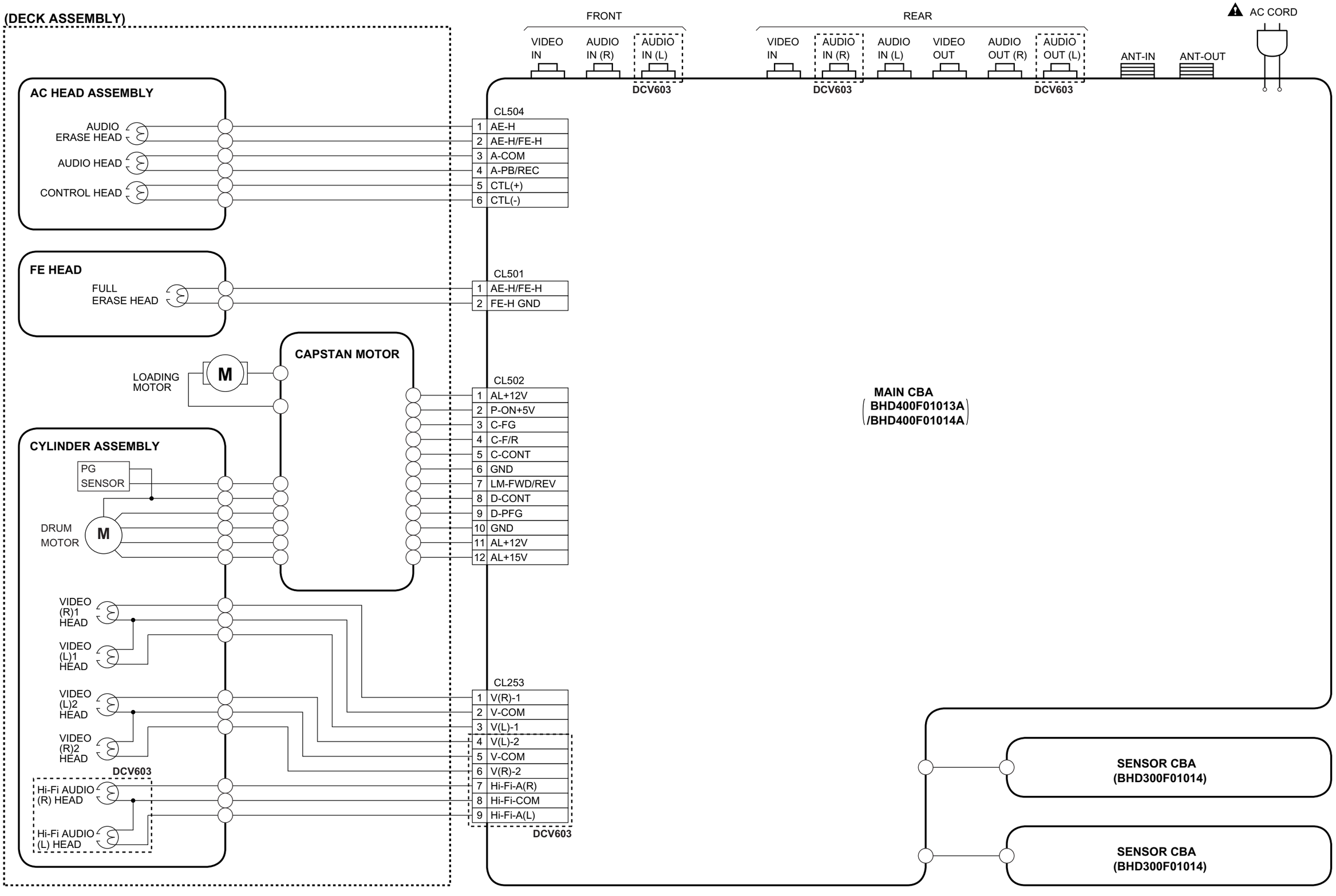
WF4 (Pin 2 of TU701)



WF8 (Pin 14 of TU701)



WIRING DIAGRAM



SYSTEM CONTROL TIMING CHARTS

Mode SW : LD-SW

LD-SW Position detection A/D Input voltage Limit (Calculated voltage)	Symbol
3.76V~4.50V (4.12V)	EJ
4.51V~5.00V (5.00V)	CL
0.00V~0.25V (0.00V)	SB
1.06V~1.50V (1.21V)	TL
0.66V~1.05V (0.91V)	FB
1.99V~2.60V (2.17V)	SF
1.51V~1.98V (1.80V)	SM
3.20V~3.75V (3.40V)	AU
0.26V~0.65V (0.44V)	AL
4.51V~5.00V (5.00V)	SS
2.61V~3.19V (2.97V)	RS

Note:

Note :

EJ ⟶ RS: Loading FWD (LM-FWD “H”, LM-REV “L”)

RS ⟶ EJ: Loading REV (LM-FWD “L”, LM-REV “H”)

Stop (A) = Loading

Stop (B) = Unloading

Note:

Symbol	Loading Status
EJ	Eject
CL	Eject ~ REW Reel
SB	REW Reel ~ Stop(B)
TL	Stop(B) ~ Brake Cancel
FB	Brake Cancel ~ FF / REW
SF	FF / REW ~ Stop(M), (FF / REW)
SM	Stop(M), (FF / REW) ~ Stop(A)
AU	Stop(A) ~ Play / REC
AL	Play / REC ~ Still / Slow
SS	Still / Slow ~ RS (REW Search)
RS	RS (REW Search)

[DCV203]

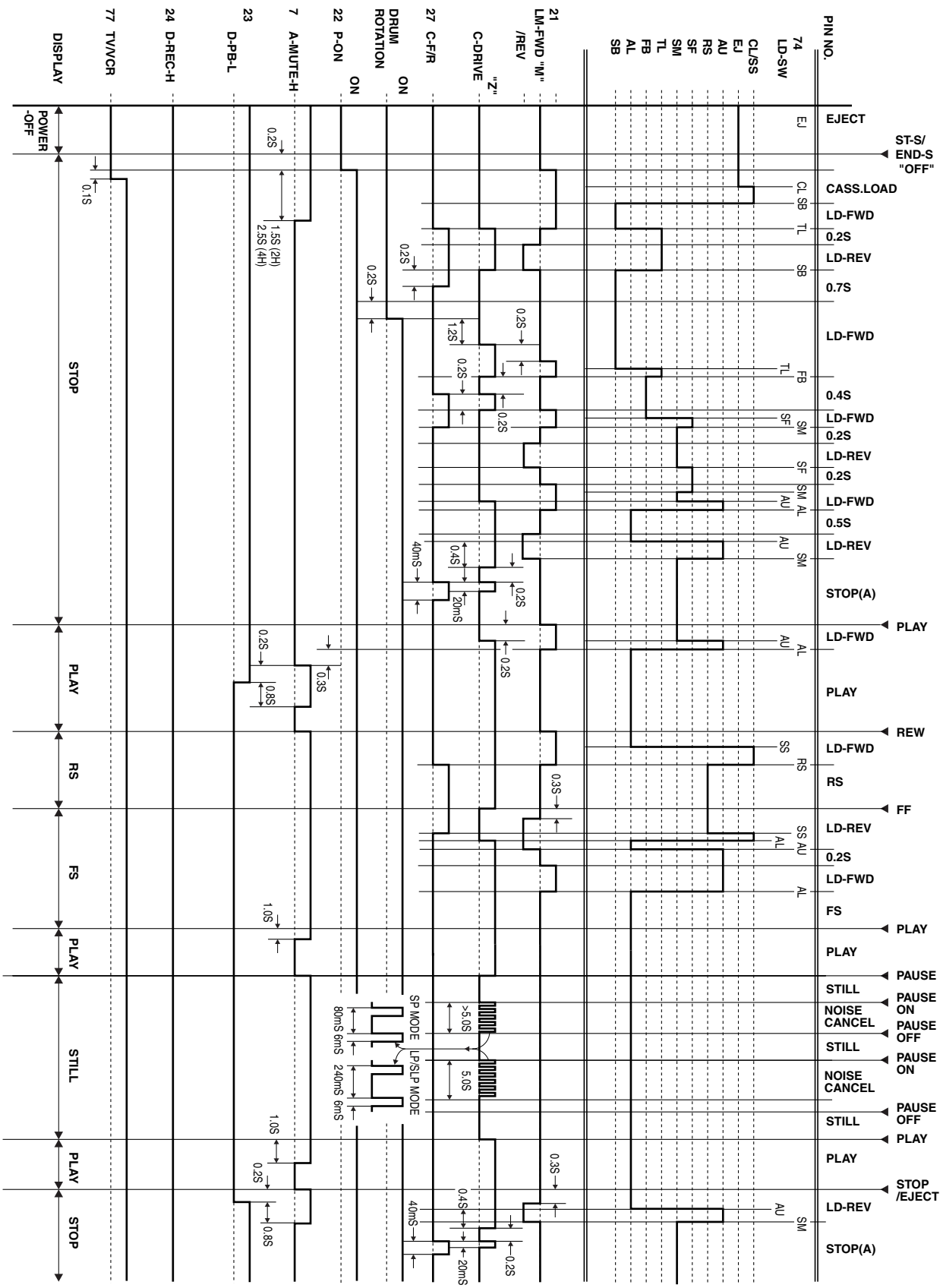

1. EJECT (POWER OFF) -> CASSETTE IN (POWER ON) -> STOP(B) -> STOP(A) -> PLAY -> RS -> FS -> PLAY -> STILL -> PLAY -> STOP(A)
PIN NO.
74 LD-SW
CL/SS
EJ
AU
RS
SF
SM
TL
FB
AL
SB
21 LM-FWD "M" /REV
C-DRIVE "Z"
27 C-F/R
DRUM ROTATION
22 P-ON
7 A-MUTE-H
23 D-PB-L
24 D-REC-H
77 TV/VCR
DISPLAY
POWER -OFF
ON
EJECT
ST-S/ END-S "OFF"
CASS.LOAD
LD-FWD
0.2S
LD-REV
0.7S
LD-FWD
0.4S
LD-FWD
0.2S
LD-REV
0.2S
LD-FWD
0.5S
LD-REV
STOP(A)
PLAY
LD-FWD
PLAY
REW
LD-FWD
RS
FF
LD-REV
0.2S
LD-FWD
FS
PLAY
PLAY
PAUSE
STILL
PAUSE ON
NOISE CANCEL
PAUSE OFF
STILL
PAUSE ON
NOISE CANCEL
PAUSE OFF
STILL
PLAY
PLAY
STOP /EJECT
LD-REV
STOP(A)
0.1S
0.2S
1.5S (2H)
2.5S (4H)
1.2S
40mS
0.4S
20mS
0.3S
0.8S
1.0S
SP MODE
LP/SLP MODE
80mS
6mS
240mS
>5.0S
5.0S
STOP
PLAY
RS
FS
PLAY
STILL
PLAY
STOP

Fig. 1

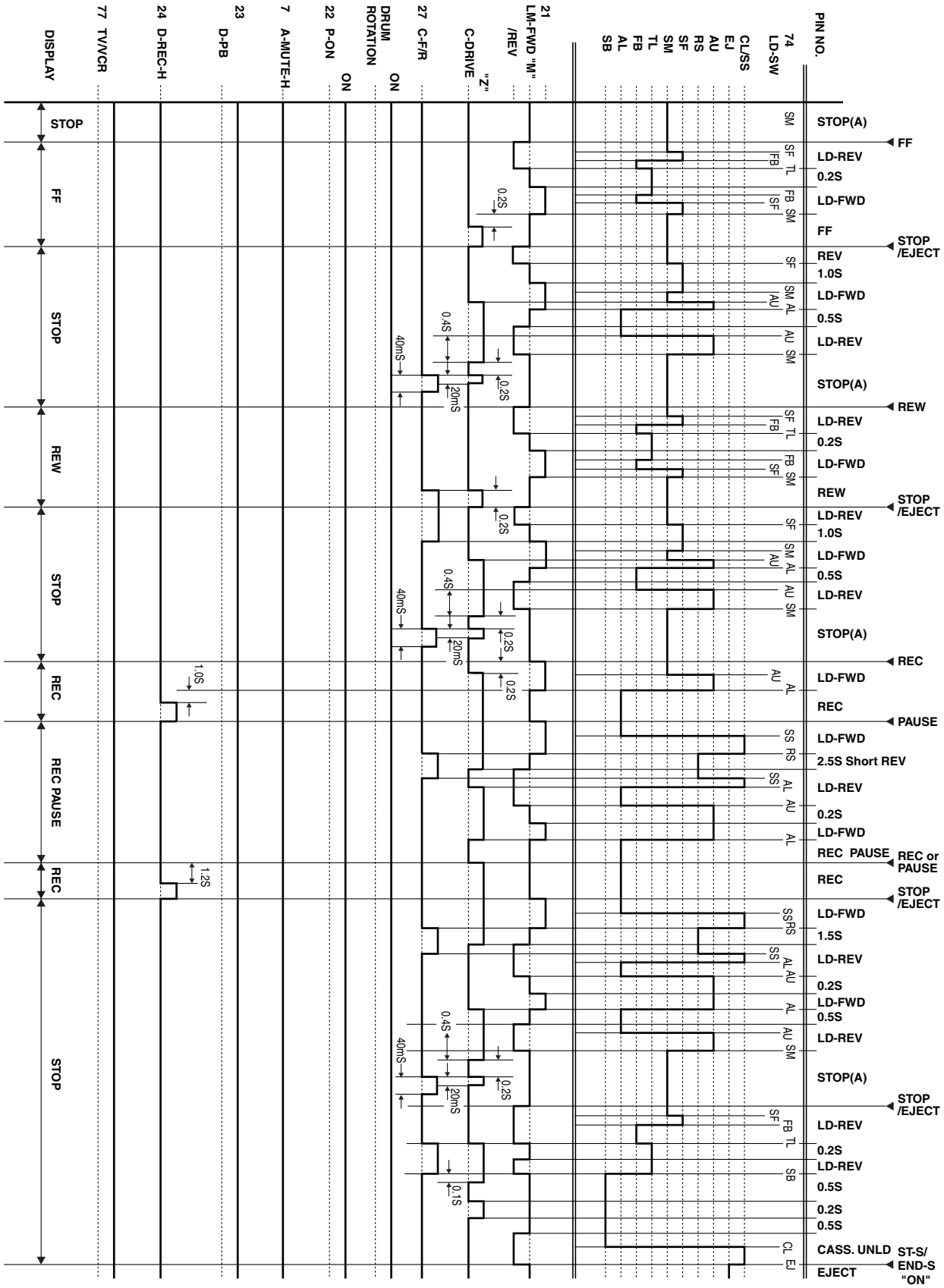

2. STOP(A) -> FF -> STOP(A) -> REW -> STOP(A) -> REC -> PAUSE -> PAUSE or REC -> STOP(A) -> EJECT
PIN NO.
74 LD-SW
CL/SS
EJ
AU
RS
SF
SM
TL
FB
AL
SB
21 LM-FWD "M" /REV
"Z" C-DRIVE
27 C-F/R
DRUM ROTATION
22 P-ON
7 A-MUTE-H
23 D-PB
24 D-REC-H
77 TV/VCR
DISPLAY
STOP(A)
FF
LD-REV
0.2S
LD-FWD
FF
STOP /EJECT
REV
1.0S
LD-FWD
0.5S
LD-REV
STOP(A)
REW
LD-REV
0.2S
LD-FWD
REW
STOP /EJECT
LD-REV
1.0S
LD-FWD
0.5S
LD-REV
STOP(A)
REC
LD-FWD
REC
PAUSE
LD-FWD
2.5S Short REV
LD-REV
0.2S
LD-FWD
REC PAUSE
REC or PAUSE
REC
STOP /EJECT
LD-FWD
1.5S
LD-REV
0.2S
LD-FWD
0.5S
LD-REV
STOP(A)
STOP /EJECT
LD-REV
0.2S
LD-REV
0.5S
0.2S
0.5S
CASS. UNLD
EJECT
ST-S/ END-S "ON"
STOP
FF
STOP
REW
STOP
REC
REC PAUSE
REC
STOP
0.2S
0.4S
40mS
20mS
1.0S
1.2S
0.1S

Fig. 2

Still/Slow Control
Frame Advance Timing Chart

1) SP Mode

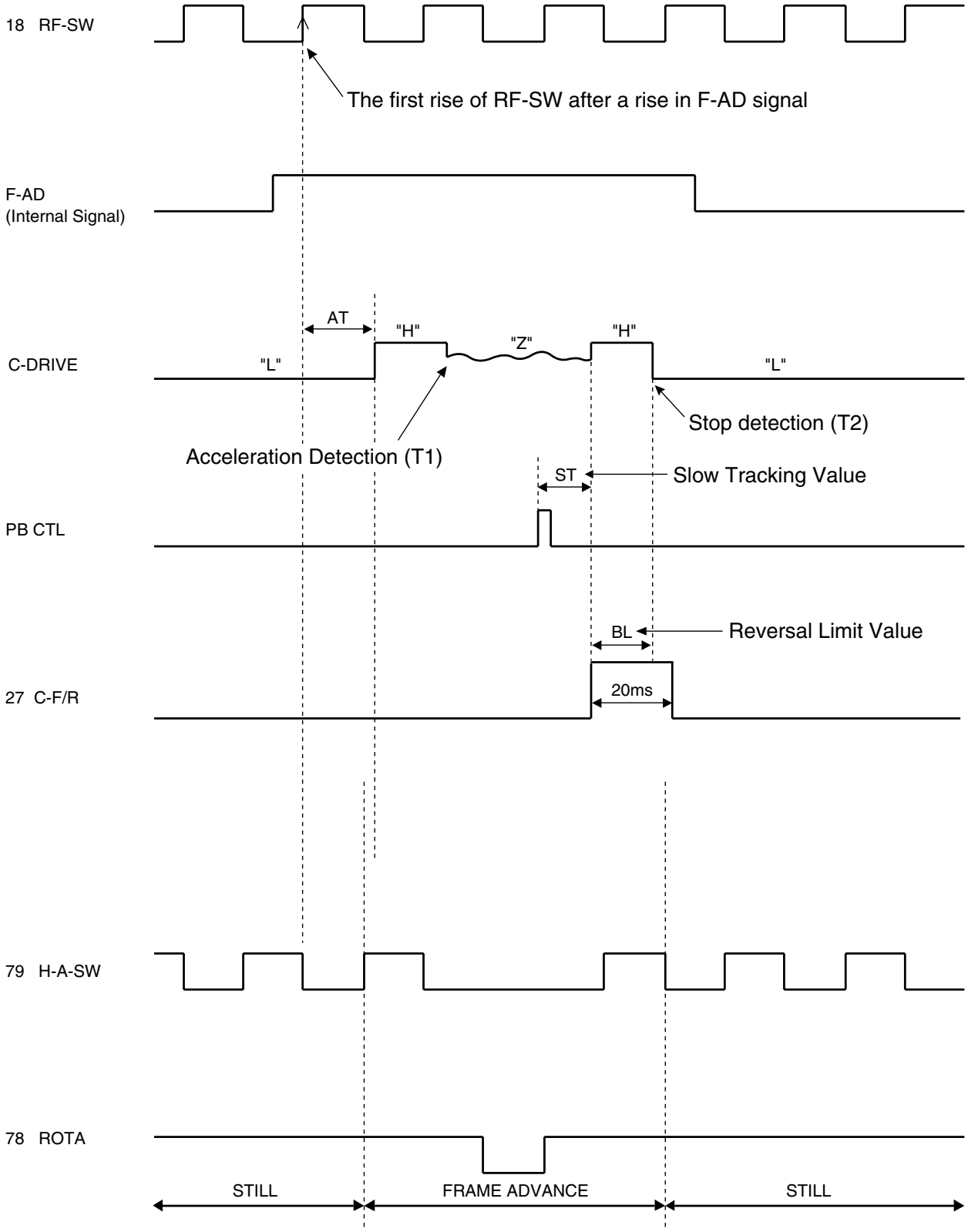


Fig. 3

2) LP/SLP Mode

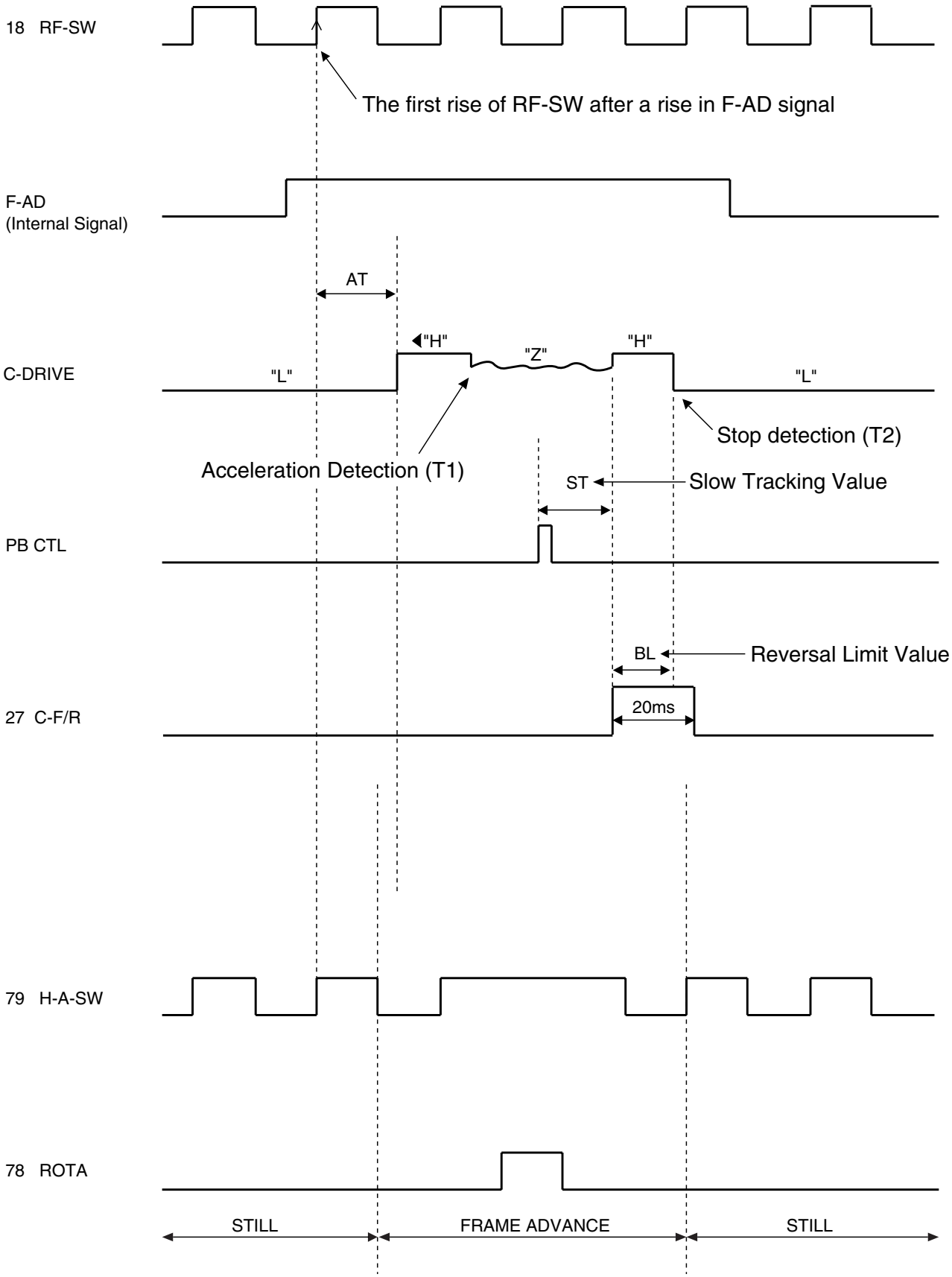


Fig. 4

1. EJECT (POWER OFF) -> CASSETTE IN (POWER ON) -> STOP(B) -> STOP(A) -> PLAY -> RS -> FS -> PLAY -> STILL -> PLAY -> STOP(A)

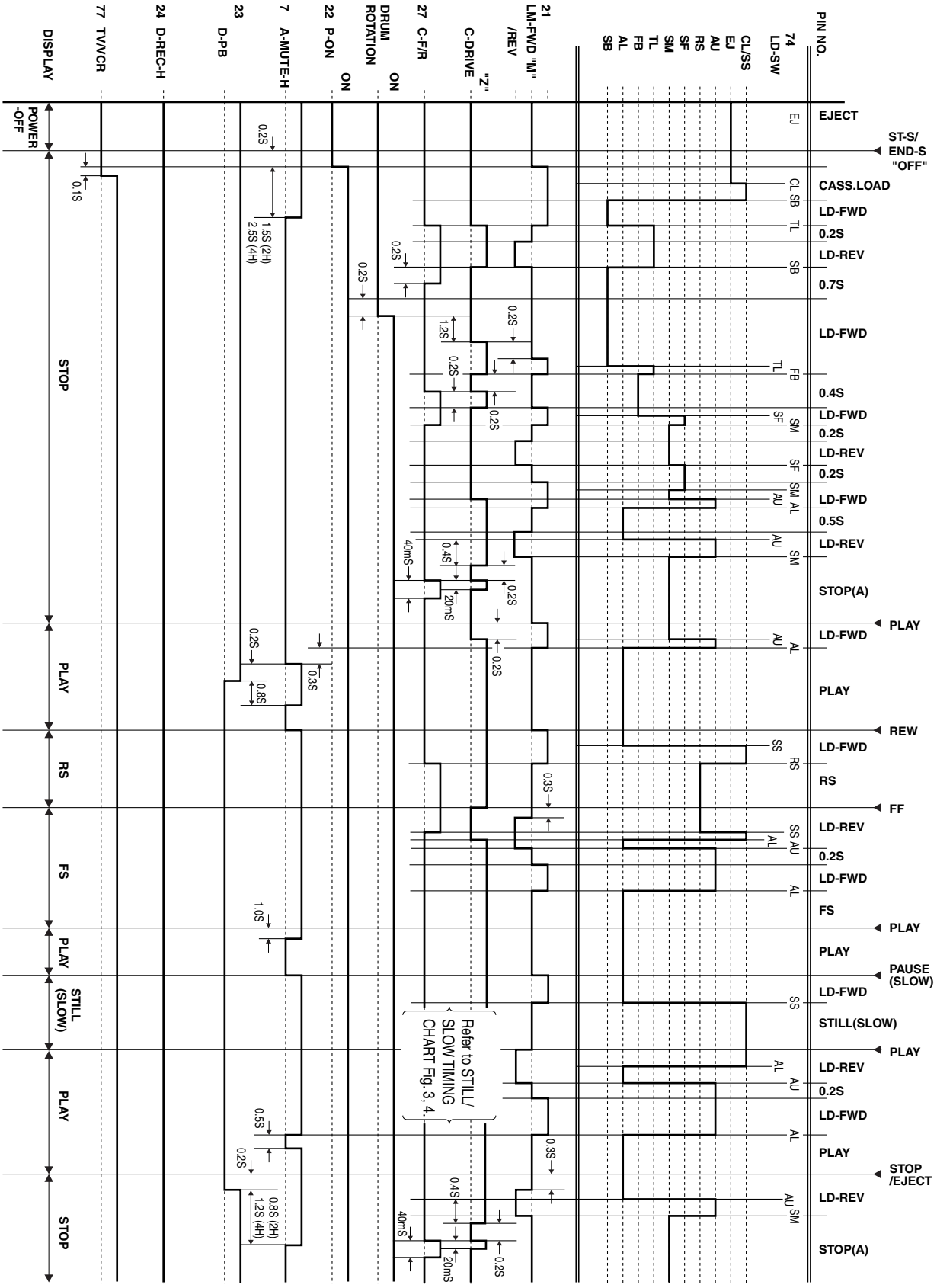


Fig. 5

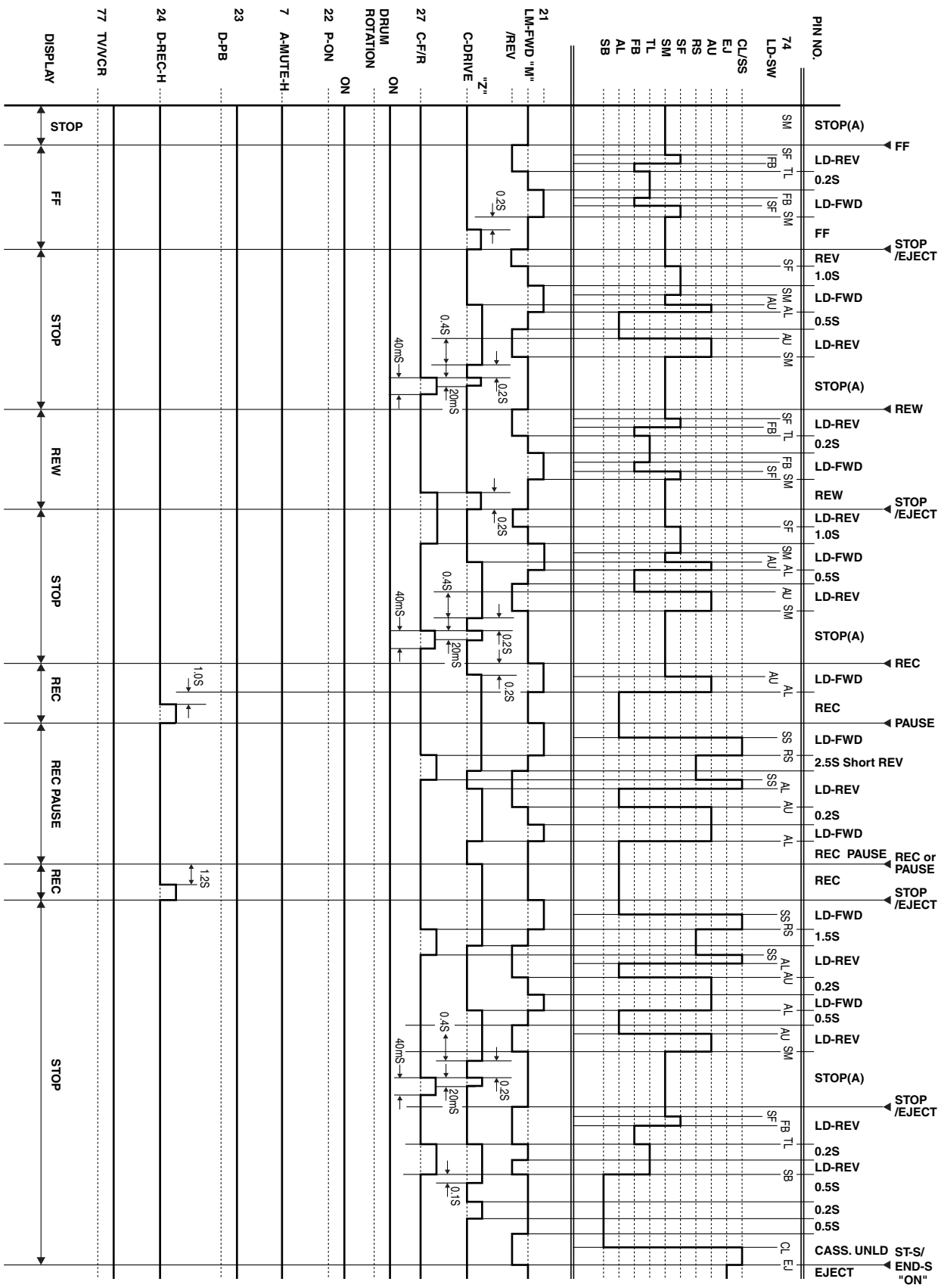

2. STOP(A) -> FF -> STOP(A) -> REW -> STOP(A) -> REC -> PAUSE -> PAUSE or REC -> STOP(A) -> EJECT
PIN NO.
74 LD-SW
CL/SS
EJ
AU
RS
SF
SM
TL
FB
AL
SB
21 LM-FWD "M" /REV
"Z" C-DRIVE
27 C-F/R
DRUM ROTATION
22 P-ON
7 A-MUTE-H
23 D-PB
24 D-REC-H
77 TV/VCR
DISPLAY
ON
STOP(A)
FF
LD-REV
0.2S
LD-FWD
FF
STOP /EJECT
REV
1.0S
LD-FWD
0.5S
LD-REV
STOP(A)
REW
LD-REV
0.2S
LD-FWD
REW
STOP /EJECT
LD-REV
1.0S
LD-FWD
0.5S
LD-REV
STOP(A)
REC
LD-FWD
REC
PAUSE
LD-FWD
2.5S Short REV
LD-REV
0.2S
LD-FWD
REC PAUSE
REC or PAUSE
REC
STOP /EJECT
LD-FWD
1.5S
LD-REV
0.2S
LD-FWD
0.5S
LD-REV
STOP(A)
STOP /EJECT
LD-REV
0.2S
LD-REV
0.5S
0.2S
0.5S
CASS. UNLD
EJECT
ST-S/ END-S "ON"
STOP
FF
STOP
REW
STOP
REC
REC PAUSE
REC
STOP
0.2S
0.4S
40mS
20mS
0.1S
1.0S
1.2S

Fig. 6

IC PIN FUNCTION DESCRIPTIONS

Comparison Chart of Models and Marks

Model	Mark
DCV203	A
DCV603	B

IC501(SERVO / SYSTEM CONTROL IC)

"H" ≥ 4.5V, "L" ≤ 1.0V

Pins that have * in the Pin No. section on table below are not used.

Pin No.	Mark	IN/ OUT	Signal Name	Function	Active Level
1		IN	P-DOWN -L	Power Voltage Down Detector Signal	L
2		IN	REC-SAF-SW	Recording Safety SW Detect (With Record tab = "L"/ With out Record tab = "H")	H/L
3		IN	T-REEL	Take Up Reel Rotation Signal	PULSE
4		-	N.U.	Not Used	-
5		IN	REMO-CON-IN	Remote Control Sensor	L
6		-	N.U.	Not Used	-
7		OUT	A-MUTE-H	Audio Mute Control Signal (Mute = "H")	H
8		-	N.U.	Not Used	-
9		-	N.U.	Not Used	-
10		-	N.U.	Not Used	-
11		OUT	TRICK-H	Special Playback = "H" in SECAM Mode	H/Z/L
12		IN/ OUT	IIC-BUS-SDA	IIC BUS Control Data	H/L
13		OUT	IIC-BUS-SCL	IIC BUS Control Clock	H/L
14		-	N.U.	Not Used	-
15		-	N.U.	Not Used	-
16		OUT	INSEL/ ST-SL	Input Selector Control Signal (EE/Rec)/Still/ Slow (Playback)	H/Hi-z /L
17		OUT	PIC-TURE-SEL	Picture Control Signal	-
18		OUT	RF-SW	Video Head Switching Pulse	H/L
19		OUT	D-V SYNC	Dummy V-sync Output	H/Hi-z
20		IN	RESET	System Reset Signal (Reset="L")	L
21		OUT	LM-FWD/ REV	Loading Motor FWD/ REV Output	H/Z/L
22		OUT	P-ON-L	Power On Signal to Low	L
23		OUT	D-PB-H	Playback Instruction Signal	H
24		OUT	D-REC-H	Delayed Record Signal	H
25	A	-	N.U.	Not Used	-
	B	OUT	HiFi-H-SW	HiFi Audio Head Switching Pulse	H/L
26		OUT	SP/LP/ SLP	Top Speed Select Signal (SP="L"/ LP="Z"/ SLP="H")	H/Z/L
27		OUT	C-F/R	Capstan Motor FWD/REV Control Signal (FWD="L"/ REV="H")	H/L
28		OUT	C-CONT	Capstan Motor Control Signal	PWM
29		OUT	D-CONT	Drum Motor Control Signal	PWM
30		-	N.U.	Not Used	-
31		-	VDD	VDD	-
32		OUT	OSCO	Main Clock Output 14.31818MHz	-

Pin No.	Mark	IN/ OUT	Signal Name	Function	Active Level
33		IN	OSCI	Main Clock Input 14.31818MHz	-
34		-	VSS	VSS	
35		IN	XI	Sub Clock Input 32.768 MHz	-
36		OUT	XO	Sub Clock Output 32.768 MHz	-
37		IN	SXI	Operation Mode Select-ing Input Sig-nal	-
38		OUT	VIDEO-OUT	Composite Video Signal Output	-
39		-	Vss2	Vss2	-
40		IN	VIDEO-IN	Composite Video Signal Input	
41		IN	C-SYNC	Composite Synchronized Pulse	PULSE
42		-	VDD2	VDD2	-
43		IN	AFCC	Low Path Filter Input Signal For AFC	-
44		OUT	AFCLPF	Low Path Filter Output Signal For AFC	-
45		-	N.U.	Not Used	-
46		-	N.U.	Not Used	-
47		IN	D-PFG	Drum PG/FG Input Signal	PULSE
48		-	N.U.	Not Used	-
49		IN	C-FG	Capstan Motor Rotation Detection Pulse	PULSE
50		-	AFG	GND	-
51		OUT	VRO	Servo Stan-dard Voltage Output	-
52		IN	VRI	Servo Stan-dard Voltage Input	-
53		-	AVss	AVSS	-
54		IN	CTLA	CTL Amp. AC GND	-
55		-	AVDD	AVDD	-

Pin No.	Mark	IN/ OUT	Signal Name	Function	Active Level
56		IN/ OUT	CTL (+)	Playback/ Record Control Signal (+)	-
57		IN/ OUT	CTL (-)	Playback/ Record Control Signal (-)	-
58		OUT	CTL	Amp. Output Control Signal for Test Point	-
59	A	-	N.U.	Not Used	-
	B	IN	HiFi/ NOR-IN	Audio Mode Input HiFi="L"/ Normal="H"	A/D
60		-	N.U.	Not Used	-
61	A	-	N.U.	Not Used	-
	B	IN	ST/SAP-IN	Tuner Stereo/ Sap Detector Signal Input	A/D
62		IN	END-S	Tape End Position Detect Signal	A/D
63		IN	AFC	Automatic Frequency Control Signal	A/D
64		IN	V-ENV	Video Envelope Comparator Signal	A/D
65		IN	PG-DELAY	Video Head Switching Pulse Signal Adjusted Voltage	A/D
66		IN	KEY-2	A/D Key Data Signal 2	A/D
67		IN	KEY-1	A/D Key Data Signal 1	A/D
68		IN	LD-SW	Deck Mode Position Detector Signal	A/D
69		IN	ST-S	Tape Start Position Detector Signal	A/D
70		OUT	REC-IND	"REC" LED Signal Output	L
71		OUT	REC-IND	"REC" LED Signal Output	L
72		OUT	VCR/TV-IND	VCR/TV Mode LED Indicate	L
73		OUT	VCR/TV-IND	VCR/TV Mode LED Indicate	L

Pin No.	Mark	IN/ OUT	Signal Name	Function	Active Level
74		OUT	CAS-IND	“CASSETTE” LED Signal Output	L
75		OUT	TIMER-IND	“TIMER” LED Signal Output	L
76		OUT	CONV-SW	RF Conv. Output Channel Switching Signal 3ch=”Hi-z”, 4ch=”L”	Hi-z/L
77		OUT	VCR/TV	RF Conv. ON/OFF Signal (TV="L"/ VCR="H")	H/L
78		OUT	C-ROTA	Color Phase Rotary Changeover SIgnal	H/L
79		OUT	H-A-SW	Video Head Amp Switching Pulse	H/L
80		IN	H-A-COMP	Head Amp Comparator Signal	H/L

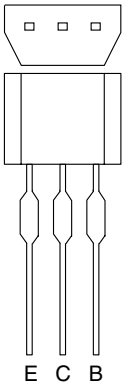
Notes:

Abbreviation for Active Level:

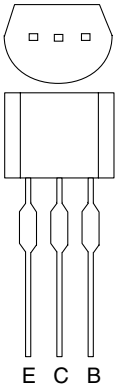
PWM -----Pulse Wide Modulation

A/D--------Analog - Digital Converter

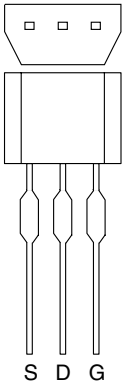
LEAD IDENTIFICATIONS



BA1F4M-T
KTA1266(GR)
KTC3199(Y,GR,BL)
2SC2785(J,H,F,K)
KRC103M

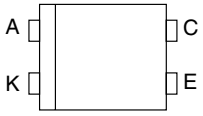


2SC1815-BL(TPE2)
2SC1815-Y(TPE2)
2SC1815-GR(TPE2)
2SC2120-Y(TPE2)
KTC3203(Y)
2SA1015-GR(TPE2)
KTC3198(Y,GR)

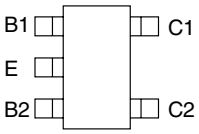


2SK3374
2SK3472

LTV-817(B,C)-F
EL817(A,B)



RN1511(TE85R)
FMG4A T148



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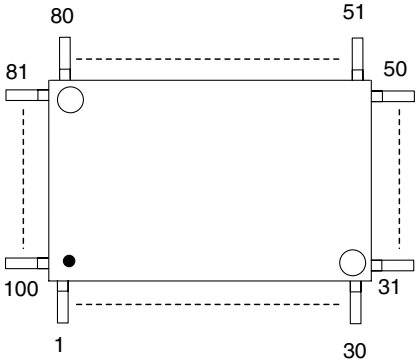

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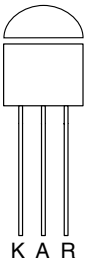
KIA431A-AT
TL431A-TA



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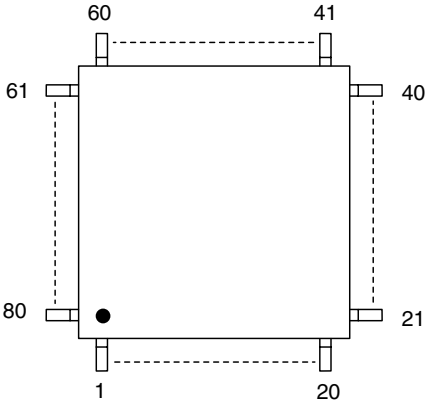
LA72670M



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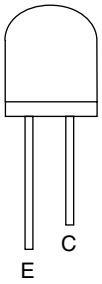


Note:
A: Anode
K: Cathode
E: Emitter
C: Collector
B: Base
R: Reference
G: Gate
D: Drain
S: Source

DECK MECHANISM SECTION

VIDEO CASSETTE RECORDER

DCV203/DCV603

Sec. 2: Deck Mechanism Section

- **Standard Maintenance**
- **Alignment for Mechanism**
- **Disassembly/Assembly of Mechanism**
- **Alignment Procedures of Mechanism**

TABLE OF CONTENTS

Standard Maintenance 2-1-1
Service Fixtures and Tools 2-2-1
Mechanical Alignment Procedures 2-3-1
Disassembly / Assembly Procedures of Deck Mechanism 2-4-1
Alignment Procedures of Mechanism 2-4-9

STANDARD MAINTENANCE

Service Schedule of Components

H: Hours ❍: Check ●: Change

Deck		Periodic Service Schedule			
Ref.No.	**Part Name**	**1,000 H**	**2,000 H**	**3,000 H**	**4,000 H**
B2	Cylinder Assembly	❍	●	❍	●
B3	Loading Motor Assembly			●	
B8	Pulley Assembly		●		●
B587	Tension Lever Assembly		●		●
B31	AC Head Assembly			●	
B573,B574	Reel (SP)(D2), Reel (TU)(D2)			●	
B37	Capstan Motor		●		●
B52	Cap Belt		●		●
*B73	FE Head			●	
B133,B134	Idler Gear, Idler Arm		●		●
B410	Pinch Arm Assembly		●		●
B414	M Brake (SP) Assembly		●		●
B416	M Brake (TU) Assembly		●		●
B525	LDG Belt		●		●
B569 (2 head only)	Cam Holder (F)		●		●
B593 (4 head, 4 head HiFi only)	Cam Holder (F) Assembly		●		●

Notes:

1. Clean all parts for the tape transport (Upper Drum with Video Head / Pinch Roller / Audio Control Head / Full Erase Head) using 90% Isopropyl Alcohol.
2. After cleaning the parts, do all DECK ADJUSTMENTS.
3. For the reference numbers listed above, refer to Deck Exploded Views.

* B73 ------ Recording Model only

Cleaning

Cleaning of Video Head

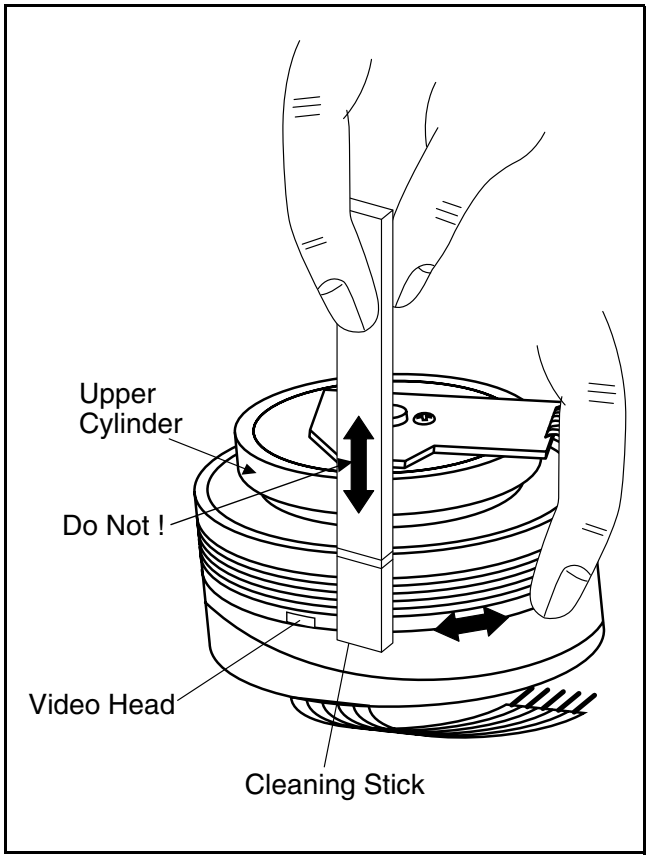
Clean the head with a head cleaning stick or chamois cloth.

Procedure

1. Remove the top cabinet.
2. Put on a glove (thin type) to avoid touching the upper and lower drum with your bare hand.
3. Put a few drops of 90% Isopropyl alcohol on the head cleaning stick or on the chamois cloth and, by slightly pressing it against the head tip, turn the upper drum to the right and to the left.

Notes:

1. The video head surface is made of very hard material, but since it is very thin, avoid cleaning it vertically.
2. Wait for the cleaned part to dry thoroughly before operating the unit.
3. Do not reuse a stained head cleaning stick or a stained chamois cloth.



Cleaning of Audio Control Head

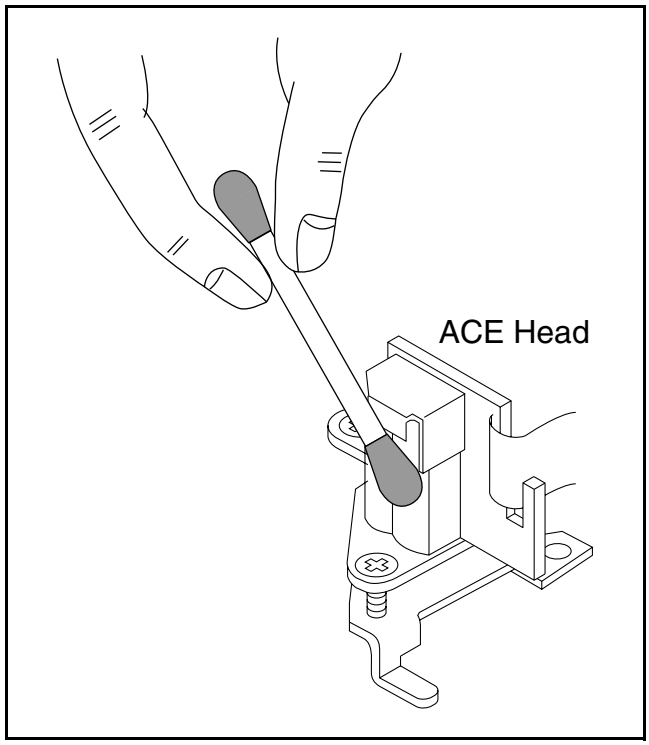
Clean the head with a cotton swab.

Procedure

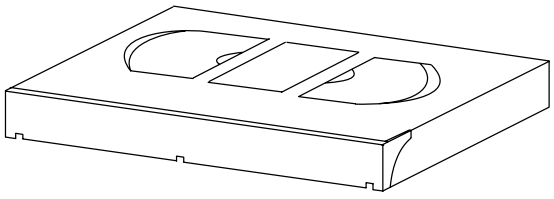
1. Remove the top cabinet.
2. Dip the cotton swab in 90% isopropyl alcohol and clean the audio control head. Be careful not to damage the upper drum and other tape running parts.

Notes:

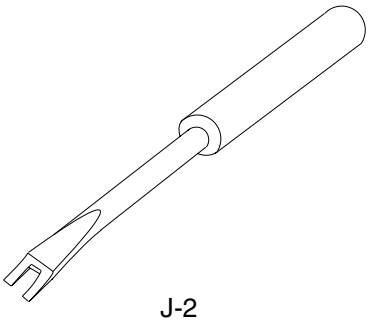
1. Avoid cleaning the audio control head vertically.
2. Wait for the cleaned part to dry thoroughly before operating the unit or damage may occur.



SERVICE FIXTURE AND TOOLS



J-1-1, J-1-2



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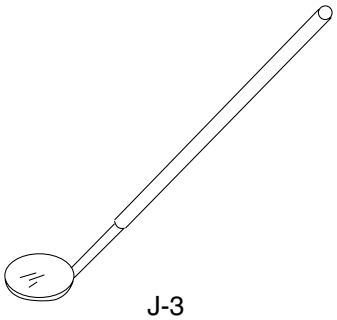
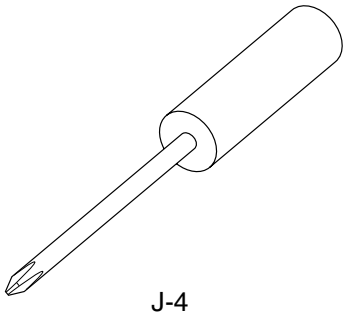
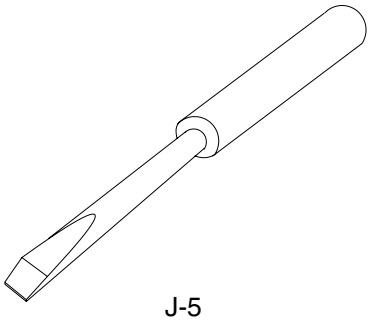


J-3



J-4



J-5

Ref. No.	Name	Part No.	Adjustment
J-1-1	Alignment Tape	FL8A	Head Adjustment of Audio Control Head
J-1-2	Alignment Tape	FL8N (2Head only) FL8NW (4Head only)	Azimuth and X Value Adjustment of Audio Control Head / Adjustment of Envelope Waveform
J-2	Guide Roller Adj.Screwdriver	Available Locally	Guide Roller
J-3	Mirror	Available Locally	Tape Transportation Check
J-4	Azimuth Adj.Screwdriver +	Available Locally	A/C Head Height
J-5	X Value Adj.Screwdriver -	Available Locally	X Value

MECHANICAL ALIGNMENT PROCEDURES

Explanation of alignment for the tape to correctly run starts on the next page. Refer to the information below on this page if a tape gets stuck, for example, in the mechanism due to some electrical trouble of the unit.

Service Information

A. Method for Manual Tape Loading/Unloading

To load a cassette tape manually:

1. Disconnect the AC plug.
2. Remove the Top Case and Front Assembly.
3. Insert a cassette tape. Though the tape will not be automatically loaded, make sure that the cassette tape is all the way in at the inlet of the Cassette Holder. To confirm this, lightly push the cassette tape further in and see if the tape comes back out, by a spring motion, just as much as you have pushed in.
4. Turn the LDG Belt in the appropriate direction shown in Fig. M1 for a minute or two to complete this task.

To unload a cassette tape manually:

1. Disconnect the AC plug.
2. Remove the Top Case and Front Assembly.
3. Make sure that the Moving guide preparations are in the Eject Position.
4. Turn the LDG Belt in the appropriate direction shown in Fig. M1 until the Moving guide preparations come to the Eject Position. Stop turning when the preparations begin clicking or can not be moved further. However, the tape will be left wound around the cylinder.
5. Turn the LDG Belt in the appropriate direction continuously, and the cassette tape will be ejected. Allow a minute or two to complete this task.

B. Method to place the Cassette Holder in the tape-loaded position without a cassette tape

1. Disconnect the AC Plug.
2. Remove the Top Case and Front Assembly.
3. Turn the LDG Belt in the appropriate direction shown in Fig. M1. Release the locking tabs shown in Fig. M1 and continue turning the LDG Belt until the Cassette Holder comes to the tape-loaded position. Allow a minute or two to complete this task.

Top View

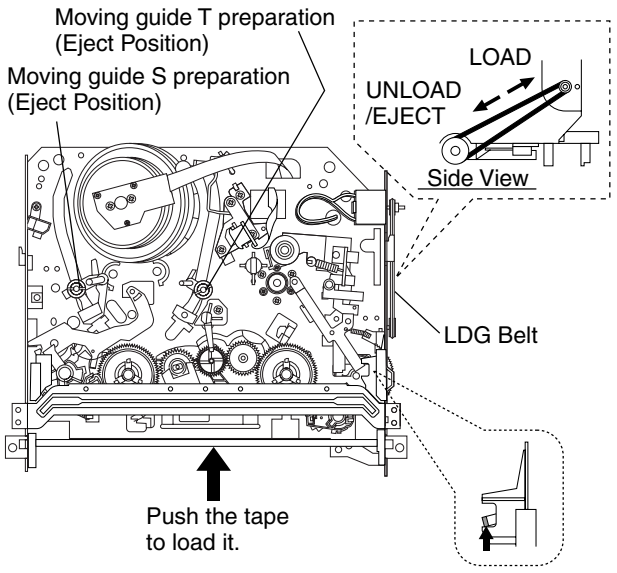


Fig. M1

Bottom View

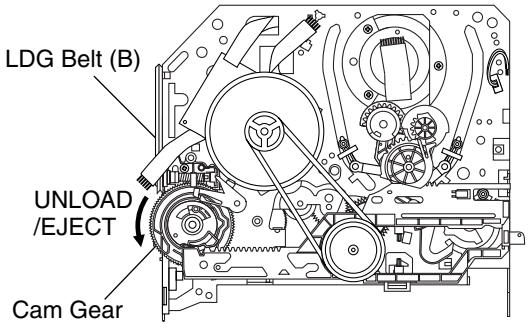


Fig. M2

1.Tape Interchangeability Alignment

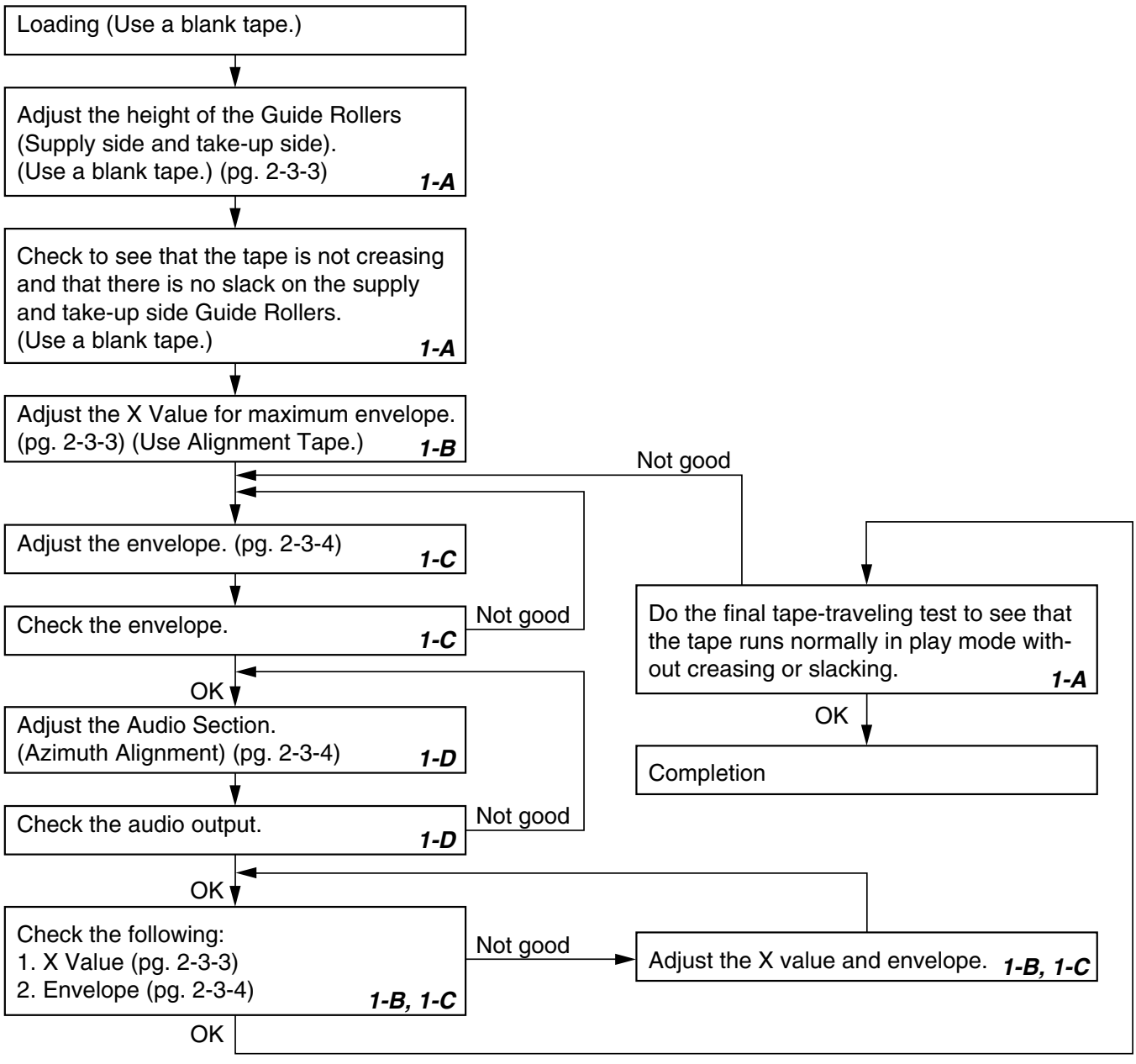
Note:
To do these alignment procedures, make sure that the Tracking Control Circuit is set to the center position every time a tape is loaded or unloaded. (Refer to page 2-3-4, procedure 1-C, step 2.)

Equipment required:

Dual Trace Oscilloscope
VHS Alignment Tape (FL8NW)
Guide Roller Adj. Screwdriver
X-Value Adj. Screwdriver

Note: Before starting this Mechanical Alignment, do all Electrical Adjustment procedures.

Flowchart of Alignment for tape traveling


Loading (Use a blank tape.)
Adjust the height of the Guide Rollers (Supply side and take-up side). (Use a blank tape.) (pg. 2-3-3) 1-A
Check to see that the tape is not creasing and that there is no slack on the supply and take-up side Guide Rollers. (Use a blank tape.) 1-A
Adjust the X Value for maximum envelope. (pg. 2-3-3) (Use Alignment Tape.) 1-B
Not good
Adjust the envelope. (pg. 2-3-4) 1-C
Check the envelope. 1-C
Not good
OK
Adjust the Audio Section. (Azimuth Alignment) (pg. 2-3-4) 1-D
Check the audio output. 1-D
Not good
OK
Check the following:
1. X Value (pg. 2-3-3)
2. Envelope (pg. 2-3-4) 1-B, 1-C
Not good
Adjust the X value and envelope. 1-B, 1-C
OK
Do the final tape-traveling test to see that the tape runs normally in play mode without creasing or slacking. 1-A
OK
Completion

1-A. Preliminary/Final Checking and Alignment of Tape Path

Purpose:

To make sure that the tape path is well stabilized.

Symptom of Misalignment:

If the tape path is unstable, the tape will be damaged.

Note: Do not use an Alignment Tape for this procedure. If the unit is not correctly aligned, the tape may be damaged.

1. Playback a blank cassette tape and check to see that the tape runs without creasing at Guide Rollers [2] and [3], and at points A and B on the lead surface. (Refer to Fig. M3 and M4.)
2. If creasing is apparent, align the height of the guide rollers by turning the top of Guide Rollers [2] and [3] with a Guide Roller Adj. Screwdriver. (Refer to Fig. M3 and M5.)

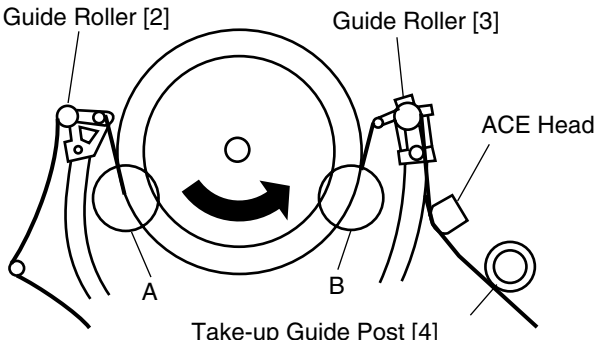


Fig. M3

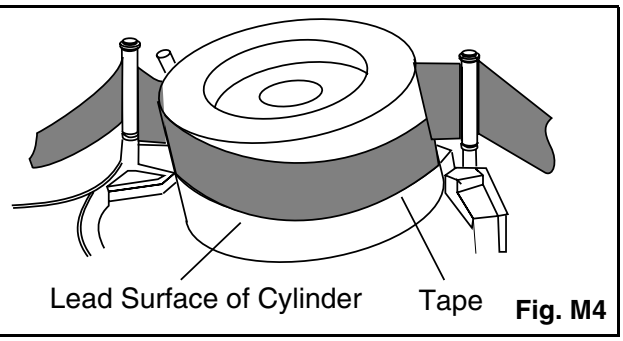


Fig. M4

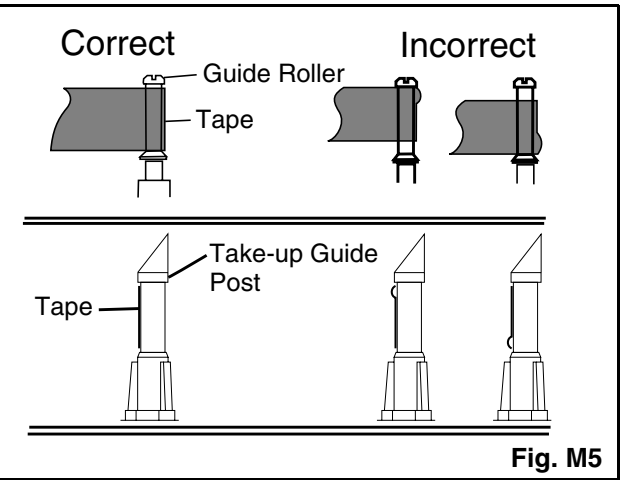


Fig. M5

3. Check to see that the tape runs without creasing at Take-up Guide Post [4] or without snaking between Guide Roller [3] and AC Head. (Fig. M3 and M5)
4. If creasing or snaking is apparent, adjust the Tilt Adj. Screw of the AC Head. (Fig. M6)

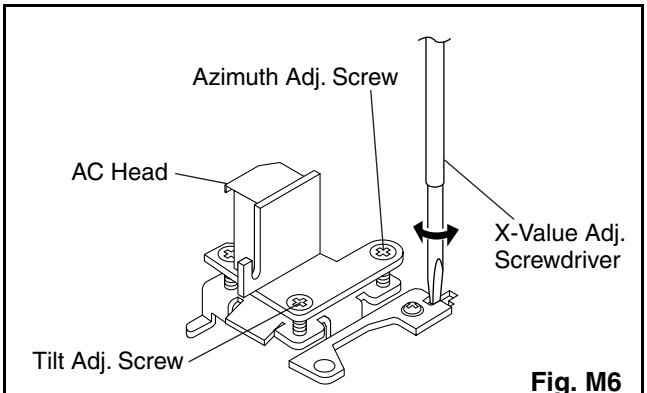


Fig. M6

1-B. X Value Alignment

Purpose:

To align the Horizontal Position of the Audio/Control/Erase Head.

Symptom of Misalignment:

If the Horizontal Position of the Audio/Control/Erase Head is not properly aligned, maximum envelope cannot be obtained at the Neutral position of the Tracking Control Circuit.

1. Connect the oscilloscope to TP301 (C-PB) and TP513 (CTL) on the Main CBA. Use TP302 (RF-SW) as a trigger.
2. Playback the Gray Scale of the Alignment Tape (FL8NW) and confirm that the PB FM signal is present.
3. Set the Tracking Control Circuit to the center position by pressing CH UP button then " PLAY " button on the unit. (Refer to note on bottom of page 2-3-4.)
4. Use the X-Value Adj. Screwdriver so that the PB FM signal at TP301 (C-PB) is maximum. (Fig. M6)
5. Press CH UP button on the unit until the CTL waveform has shifted by approx. +2msec. Make sure that the envelope is simply attenuated (shrinks in height) during this process so that you will know the envelope has been at its peak.

6. Press CH DOWN button on the unit until the CTL waveform has shifted from its original position (not the position achieved in step 5, but the position of CTL waveform in step 4) by approximately -2msec. Make sure that the envelope is simply attenuated (shrinks in height) once CTL waveform passes its original position and is further brought in the minus direction.
7. Set the Tracking Control Circuit to the center position by pressing CH UP button and then " PLAY " button.

1-C. Checking/Adjustment of Envelope Waveform

Purpose:

To achieve a satisfactory picture and precise tracking.

Symptom of Misalignment:

If the envelope output is poor, noise will appear in the picture. The tracking will then lose precision and the playback picture will be distorted by any slight variation of the Tracking Control Circuit.

1. Connect the oscilloscope to TP301 (C-PB) on the Main CBA. Use TP302 (RF-SW) as a trigger.
2. Playback the Gray Scale on the Alignment Tape (FL8NW). Set the Tracking Control Circuit to the center position by pressing CH UP button and then " PLAY " button on the unit. Adjust the height of Guide Rollers [2] and [3] (Fig. M3, Page 2-3-3) watching the oscilloscope display so that the envelope becomes as flat as possible. To do this adjustment, turn the top of the Guide Roller with the Guide Roller Adj. Screwdriver.
3. If the envelope is as shown in Fig. M7, adjust the height of Guide Roller [2] (Refer to Fig. M3) so that the waveform looks like the one shown in Fig. M9.
4. If the envelope is as shown in Fig. M8, adjust the height of Guide Roller [3] (Refer to Fig. M3) so that the waveform looks like the one shown in Fig. M9.
5. When Guide Rollers [2] and [3] (Refer to Fig.M3) are aligned properly, there is no envelope drop either at the beginning or end of track as shown in Fig. M9.

Note: Upon completion of the adjustment of Guide Rollers [2] and [3] (Refer to Fig. M3), check the X Value by pushing the CH UP or DOWN buttons alternately, to check the symmetry of the envelope. Check the number of pushes to ensure center position. The number of pushes CH UP button to achieve 1/2 level of envelope should match the number of pushes CH DOWN button from center. If required, redo the "X Value Alignment."

1-D. Azimuth Alignment of Audio/Control/ Erase Head

Purpose:

To correct the Azimuth alignment so that the Audio/ Control/Erase Head meets tape tracks properly.

Symptom of Misalignment:

If the position of the Audio/Control/Erase Head is not properly aligned, the Audio S/N Ratio or Frequency Response will be poor.

1. Connect the oscilloscope to the audio output jack on the rear side of the deck.
2. Playback the alignment tape (FL8NW) and confirm that the audio signal output level is 8kHz.
3. Adjust Azimuth Adj. Screw so that the output level on the AC Voltmeter or the waveform on the oscilloscope is at maximum. (Fig. M6)

Dropping envelope level at the beginning of track.

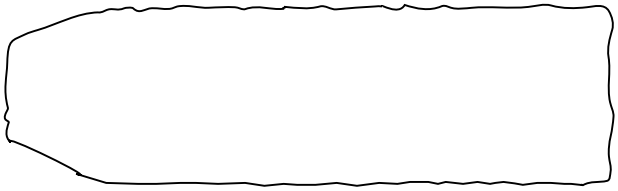


Fig. M7

Dropping envelope level at the end of track.

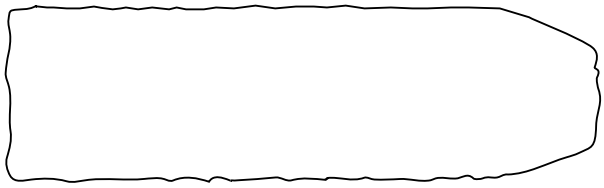


Fig. M8

Envelope is adjusted properly. (No envelope drop)

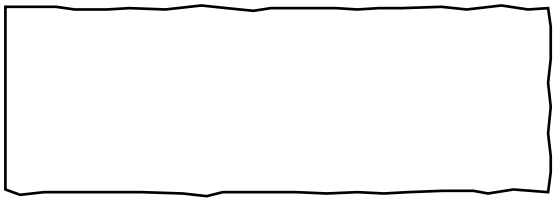


Fig. M9

DISASSEMBLY/ASSEMBLY PROCEDURES OF DECK MECHANISM

Before following the procedures described below, be sure to remove the deck assembly from the cabinet. (Refer to CABINET DISASSEMBLY INSTRUCTIONS on page 1-6-1.)
All the following procedures, including those for adjustment and replacement of parts, should be done in Eject mode; see the positions of [41] and [42] in Fig.DM1 on page 2-4-3. When reassembling, follow the steps in reverse order.

STEP /LOC. No.	START-ING No.	PART		REMOVAL		INSTALLATION
				Fig. No.	REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	ADJUSTMENT CONDITION
[1]	[1]	Guide Holder A	T	DM3	2(S-1)	
[2]	[1]	Cassette Holder Assembly	T	DM4		
[3]	[2]	Slider (SP)	T	DM5	*(L-1)	
[4]	[2]	Slider (TU)	T	DM5	*(L-2)	
[5]	[4]	Lock Lever	T	DM5	*(L-3),*(P-1)	
[6]	[2]	Cassette Plate	T	DM5		
[7]	[7]	Cylinder Assembly	T	DM1,DM6	Desolder, 3(S-2)	
[8]	[8]	Loading Motor Assembly	T	DM1,DM7	Desolder, LDG Belt, 2(S-3)	
[9]	[9]	AC Head Assembly	T	DM1,DM7	(S-4)	
[10]	[2]	Tape Guide Arm Assembly	T	DM1,DM8	*(P-2)	
[11]	[10]	C Door Opener	T	DM1,DM8	*(L-4)	
[12]	[11]	Pinch Arm (B)	T	DM1,DM8	*(P-3)	
[13]	[12]	Pinch Arm Assembly	T	DM1,DM8		
[14]	[14]	FE Head Assembly	T	DM1,DM9	(S-5)	
[15]	[15]	Prism	T	DM1,DM9	(S-6)	
[16]	[2],[15]	Sensor Gear	T	DM1,DM15		
[17]	[2]	Slider Shaft	T	DM10	*(L-5)	
[18]	[17]	C Drive Lever (SP)	T	DM10		
[19]	[17]	C Drive Lever (TU)	T	DM10	(S-7),*(P-4)	
[20]	[7],[8], [10]	Capstan Motor	B	DM2,DM11	3(S-8), Cap Belt	
[21]	[21]	Clutch Assembly	B	DM2,DM12	(C-1)	
[22]	[22]	Cam Holder (F) Assembly	B	DM2,DM12	*(L-6)	
[23]	[23]	Cam Gear (B)	B	DM2,DM12	(C-4)*(P-5)	
[24]	[24]	Mode Gear	B	DM2,DM13	(C-2)	
[25]	[21],[23], [24]	Mode Lever	B	DM2,DM13	(C-3), *(L-8)	
[26]	[22]	Worm Holder	B	DM2,DM13	(S-9),*(L-9),*(L-10)	
[27]	[26]	Pulley Assembly	B	DM2,DM13		
[28]	[25],[26]	Cam Gear (A)	B	DM2,DM13		
[29]	[25]	Idler Gear	B	DM1,DM14		
[30]	[29]	Idler Arm	B	DM1,DM14	*(L-11)	
[31]	[25]	BT Arm	B	DM2,DM14	*(P-6)	
[32]	[25]	Loading Arm (SP) Assembly	B	DM2,DM14		(+)Refer to Alignment Sec.Pg.2-4-9

STEP /LOC. No.	START-ING No.	PART		REMOVAL		INSTALLATION
				Fig. No.	REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	ADJUSTMENT CONDITION
[33]	[32]	Loading Arm (TU) Assembly	B	DM2,DM14		(+)Refer to Alignment Sec.Pg.2-4-9
[34]	[2],[25]	M Brake (TU) Assembly	T	DM1,DM15	*(P-7), Brake Belt	
[35]	[2],[25]	M Brake (SP) Assembly	T	DM1,DM15	*(P-8)	
[36]	[35]	Tension Lever Assembly	T	DM1,DM15		
[37]	[36]	T Lever Holder	T	DM15	*(L-12)	
[38]	[34]	Reel (TU)(D2)	T	DM1,DM15		
[39]	[38]	M Gear	T	DM1,DM15		
[40]	[36]	Reel (SP)(D2)	T	DM1,DM15		
[41]	[32],[36]	Moving Guide S Preparation	T	DM1,DM16		
[42]	[33]	Moving Guide T Preparation	T	DM1,DM16		
[43]	[19]	TG Post Assembly	T	DM1,DM16	*(L-13)	
[44]	[28]	Rack Assembly	R	DM17		(+)Refer to Alignment Sec.Pg.2-4-10
[45]	[44]	F Door Opener	R	DM17		
[46]	[46]	Cleaner Assembly	T	DM1,DM6		
[47]	[46]	CL Post	T	DM6	*(L-14)	
↓ (1)	↓ (2)	↓ (3)	↓ (4)	↓ (5)	↓ (6)	↓ (7)

(1): Follow steps in sequence. When reassembling, follow the steps in reverse order.
These numbers are also used as identification (location) No. of parts in the figures.

(2): Indicates the part to start disassembling with in order to disassemble the part in column (1).

(3): Name of the part

(4): Location of the part: T=Top B=Bottom R=Right L=Left

(5): Figure Number

(6): Identification of parts to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.
P=Spring, W=Washer, C=Cut Washer, S=Screw, *=Unhook, Unlock, Release, Unplug, or Desolder
e.g., 2(L-2) = two Locking Tabs (L-2).

(7): Adjustment Information for Installation
(+):Refer to Deck Exploded Views for lubrication.

.

Top View

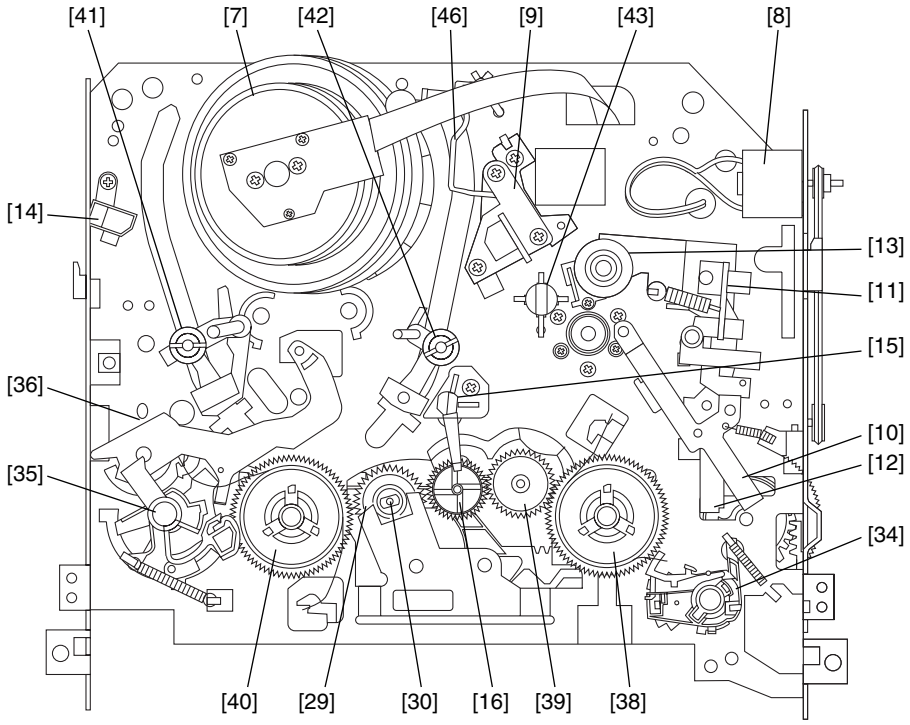


Fig. DM1

Bottom View

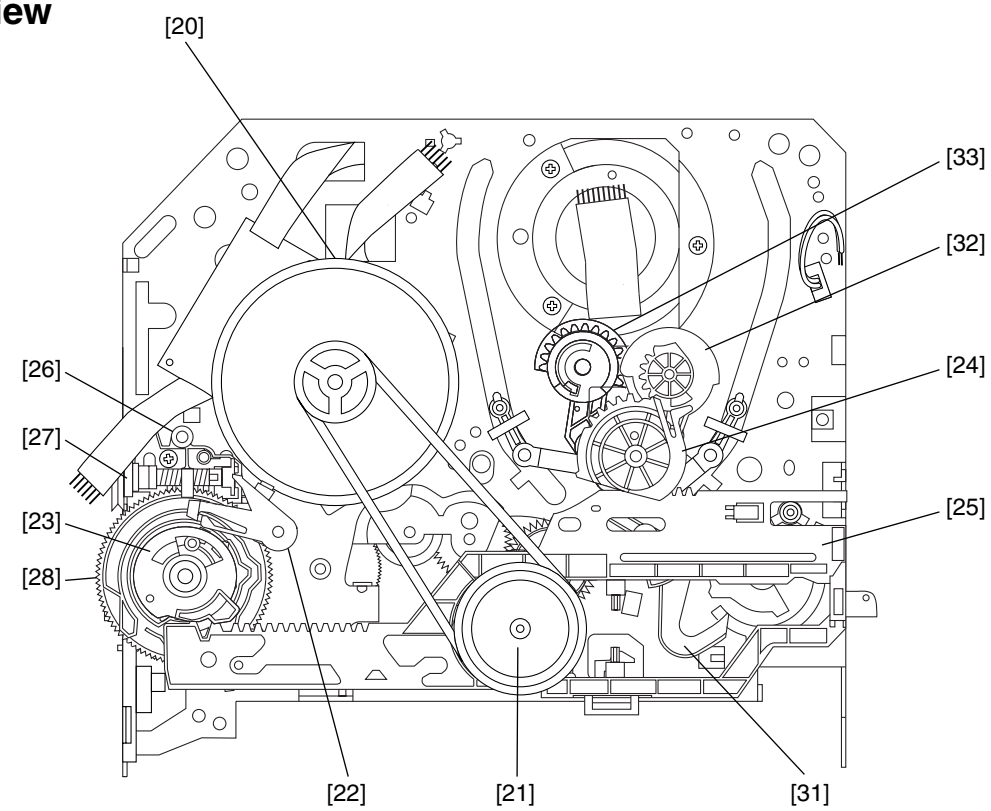


Fig. DM2

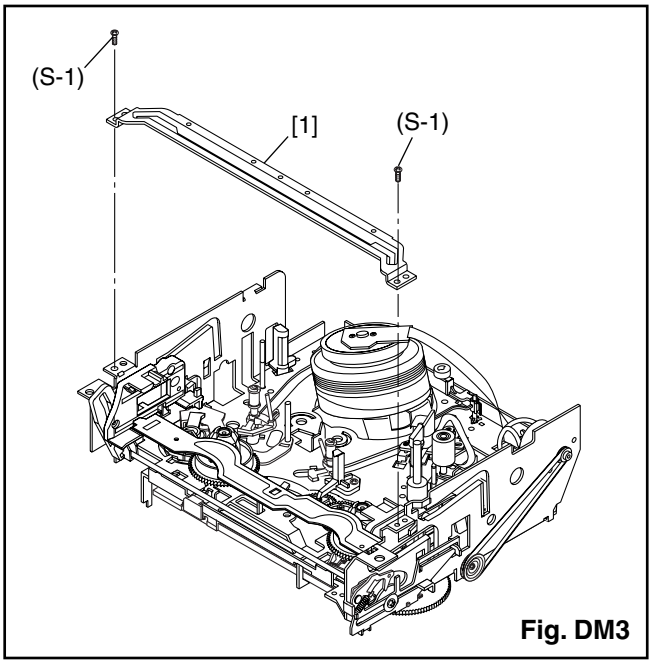


Fig. DM3

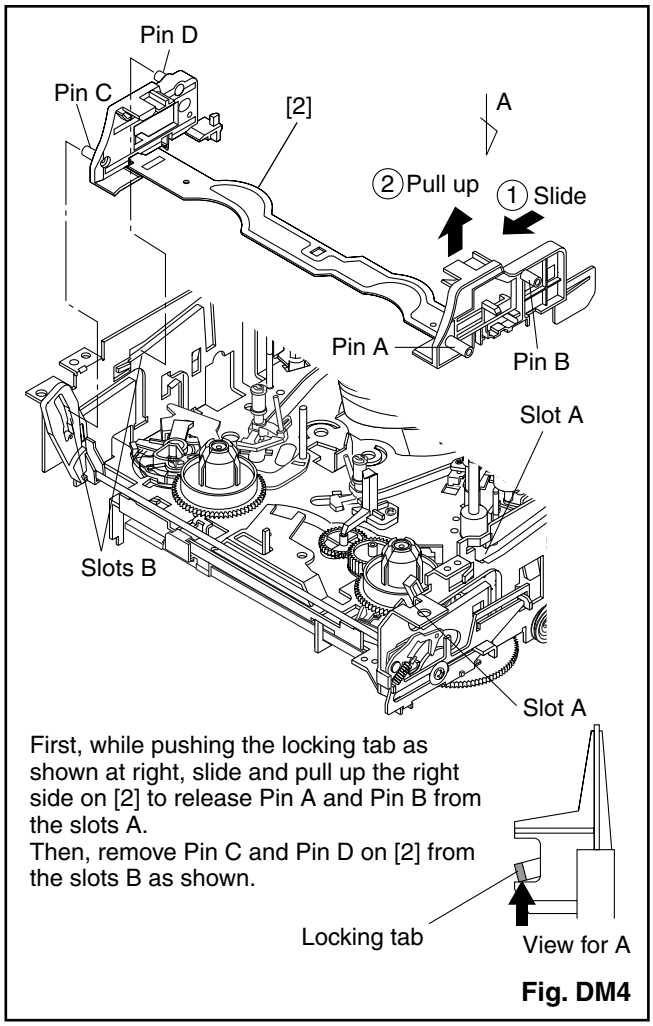

Pin D
Pin C
[2]
A
2 Pull up
1 Slide
Pin A
Pin B
Slot A
Slots B
Slot A
First, while pushing the locking tab as shown at right, slide and pull up the right side on [2] to release Pin A and Pin B from the slots A.
Then, remove Pin C and Pin D on [2] from the slots B as shown.
Locking tab
View for A

Fig. DM4

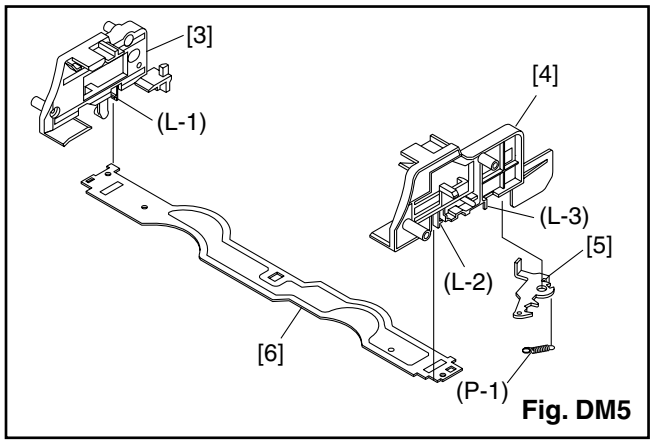


Fig. DM5

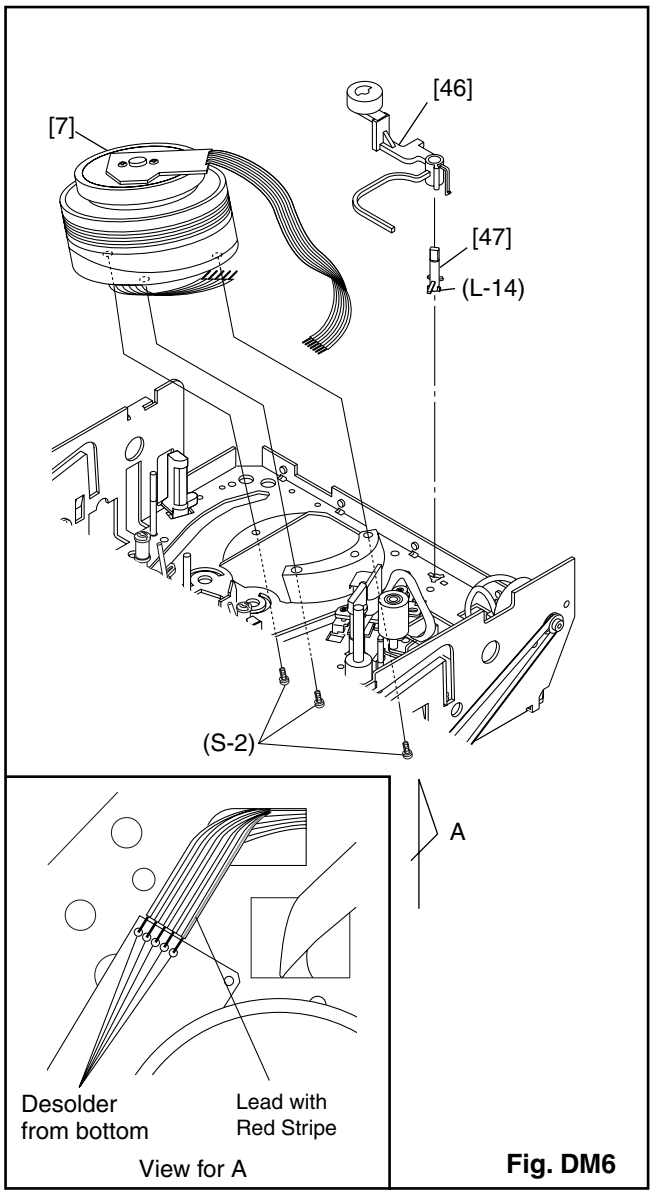


Fig. DM6

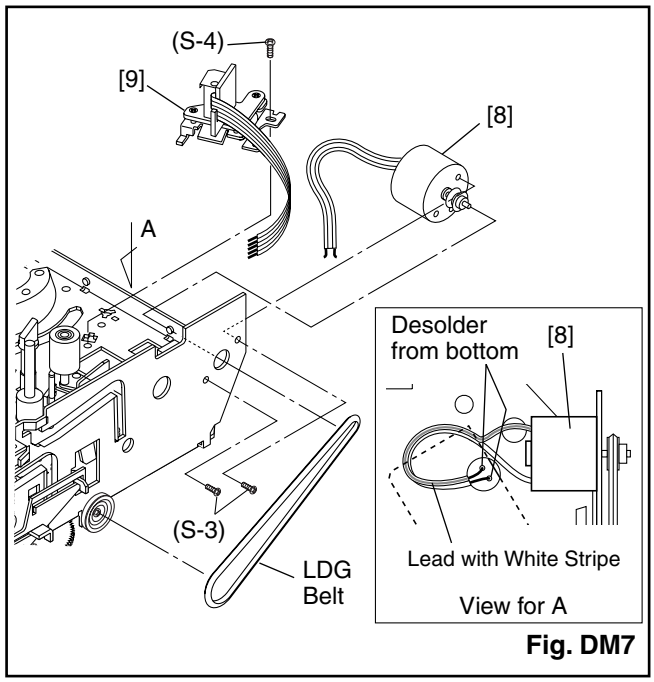


Fig. DM7

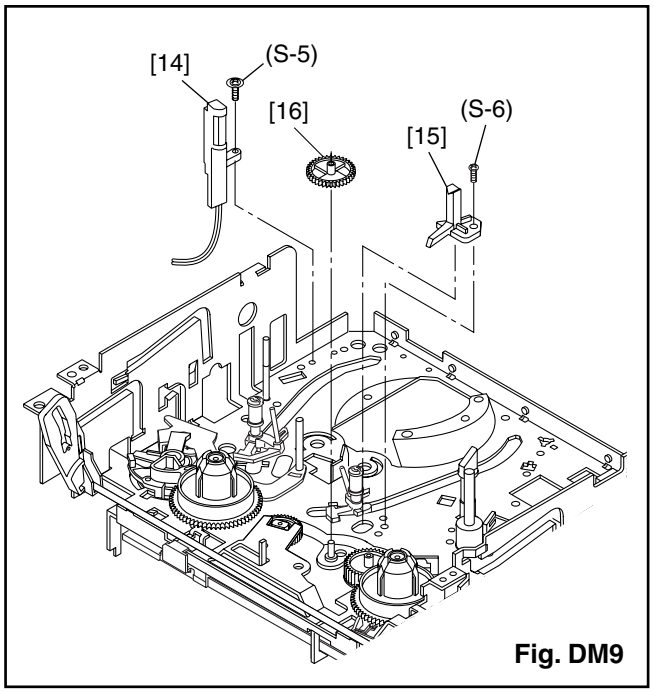


Fig. DM9

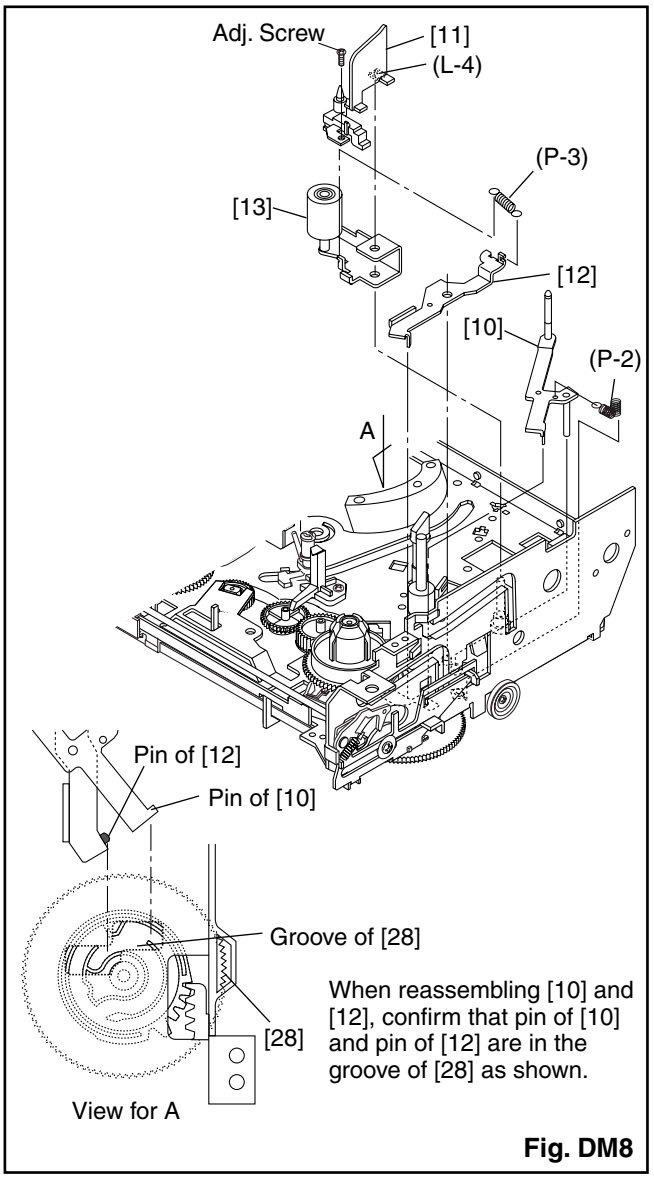


Fig. DM8

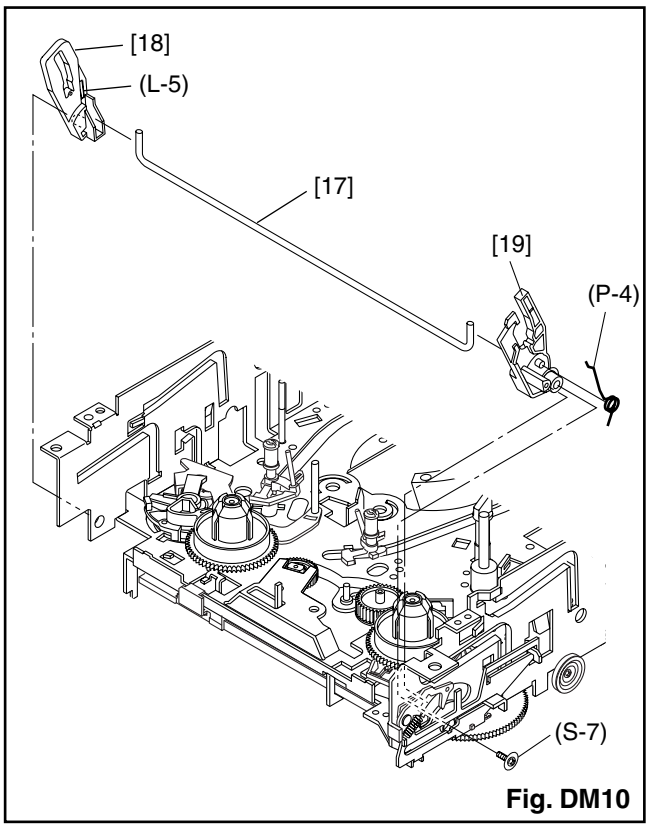


Fig. DM10

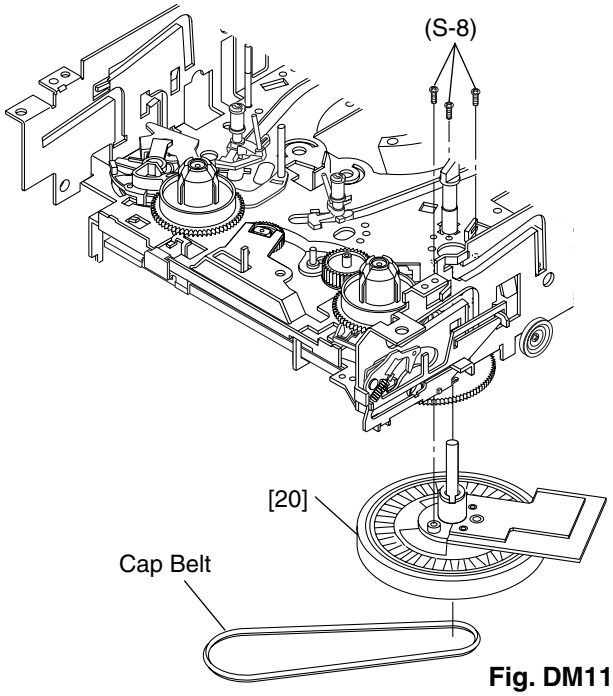
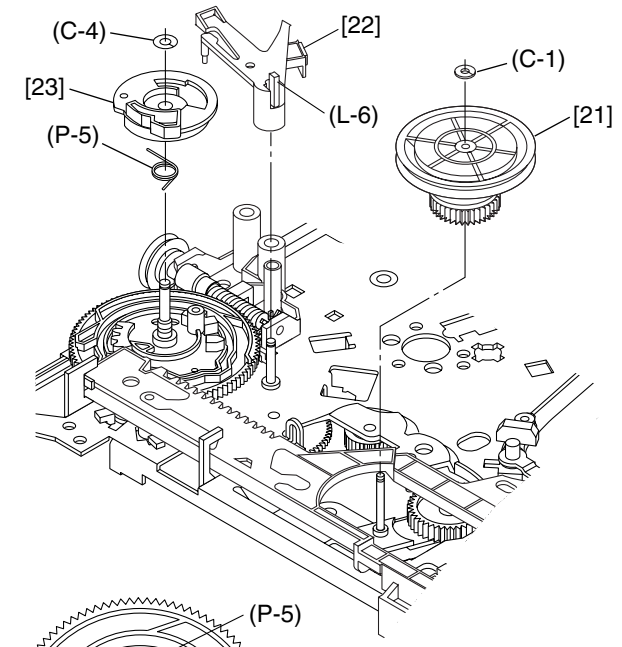
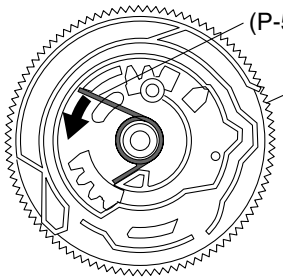


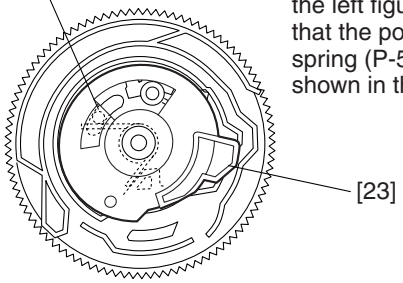
Fig. DM11



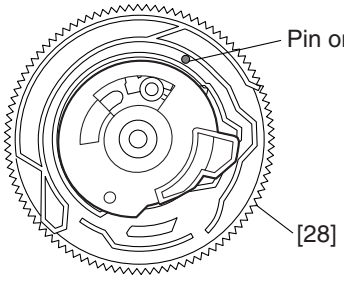


When installing [23], install the spring (P-5) to [28] as shown in the left figure, and then install [23] while pressing the spring (P-5) to the direction of the arrow in the left figure and confirming that the position of the spring (P-5) is placed as shown in the left figure.

Pin on bottom of [23]

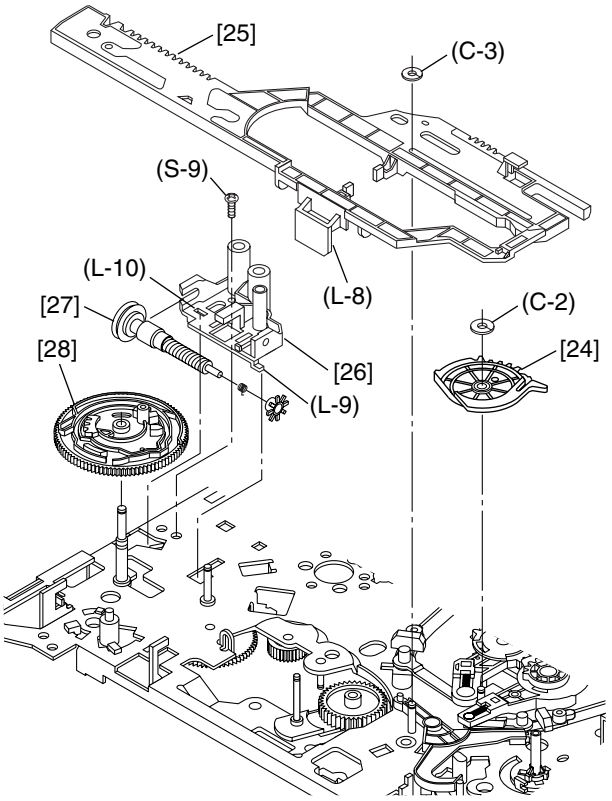


Top View

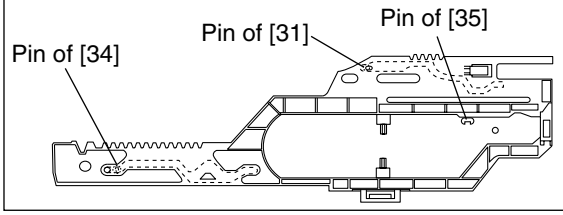


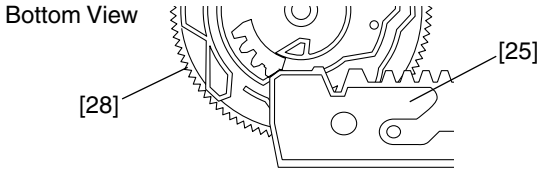
Position of pin on [22]

Fig. DM12

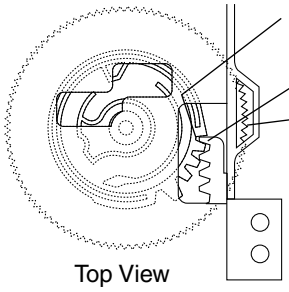


Position of Mode Lever when installed





Align [25] and [28] as shown.



When reassembling [28], align the first groove on [28] to the first tooth on [44] as shown.

Fig. DM13

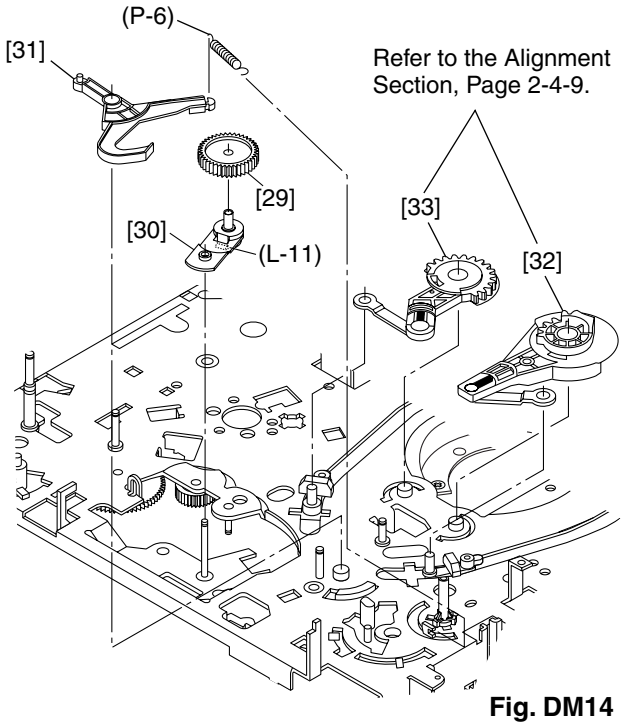


Fig. DM14

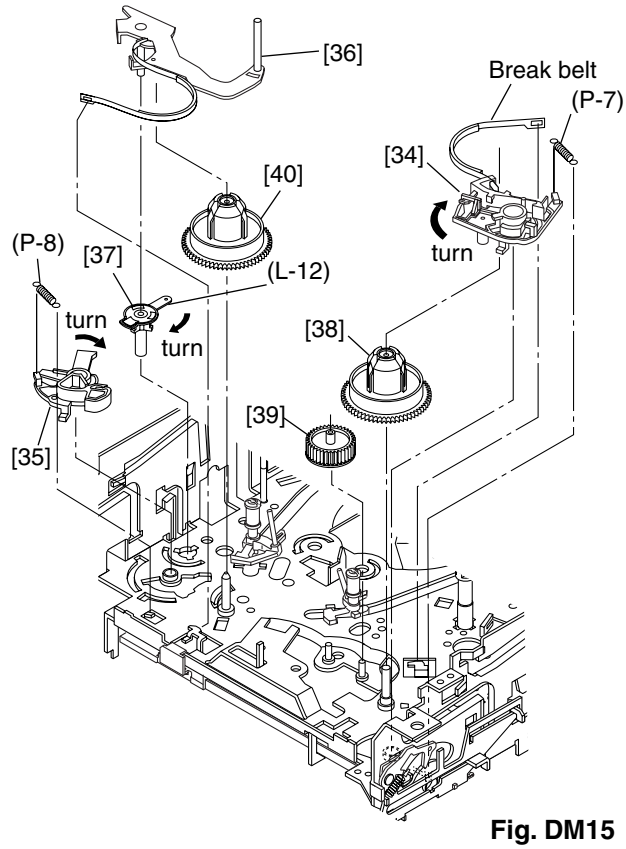


Fig. DM15

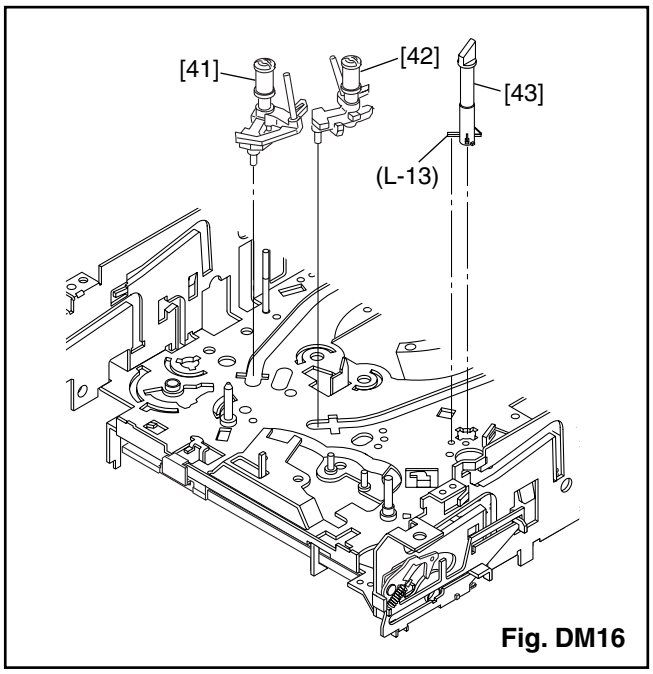


Fig. DM16

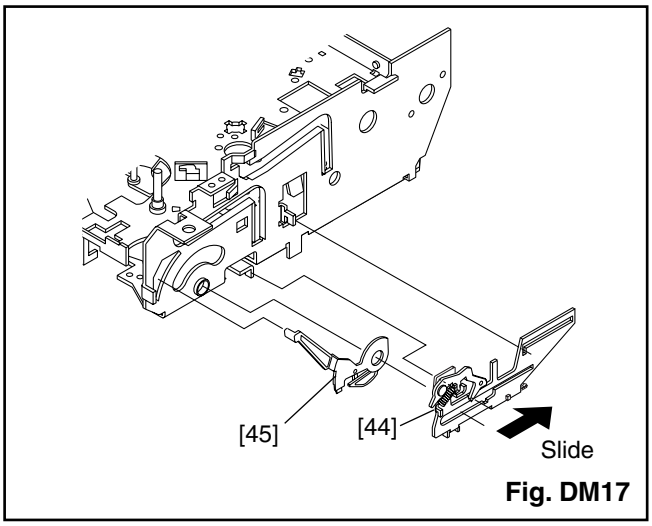


Fig. DM17

ALIGNMENT PROCEDURES OF MECHANISM

The following procedures describe how to align the individual gears and levers that make up the tape loading/unloading mechanism. Since information about the state of the mechanism is provided to the System Control Circuit only through the Mode Switch, it is essential that the correct relationship between individual gears and levers be maintained.

All alignments are to be performed with the mechanism in Eject mode, in the sequence given. Each procedure assumes that all previous procedures have been completed.

IMPORTANT:

If any one of these alignments is not performed properly, even if off by only one tooth, the unit will unload or stop and it may result in damage to the mechanical or electrical parts.

Alignment points in Eject Position

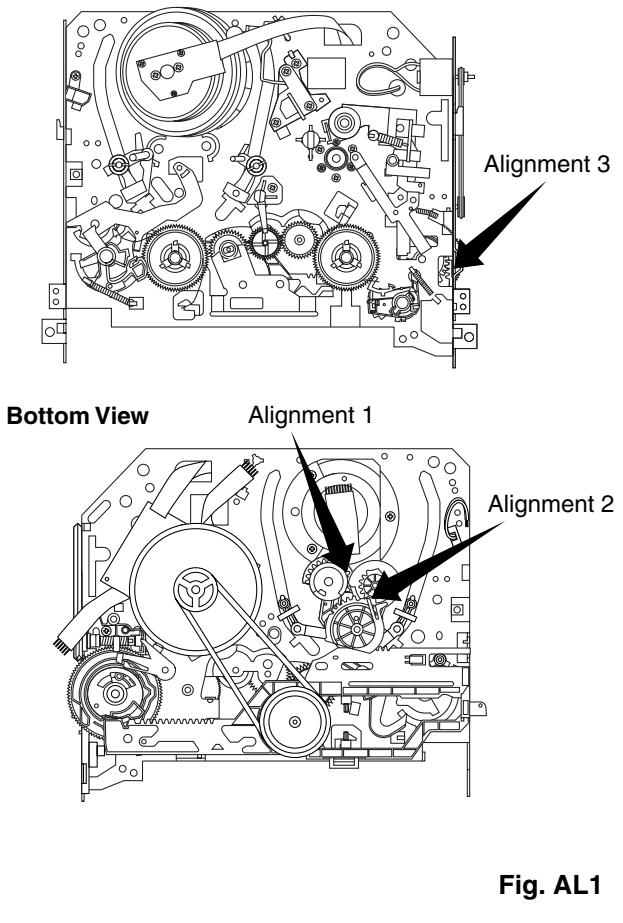


Fig. AL1

Alignment 1

Loading Arm (SP) and (TU) Assembly

Install Loading Arm (SP) and (TU) Assembly so that their triangle marks point to each other as shown in Fig. AL2.

Alignment 2

Mode Gear

Keeping the two triangles pointing at each other, install the Loading Arm (TU) Assembly so that the last tooth of the gear meets the most inside teeth of the Mode Gear. See Fig. AL2.

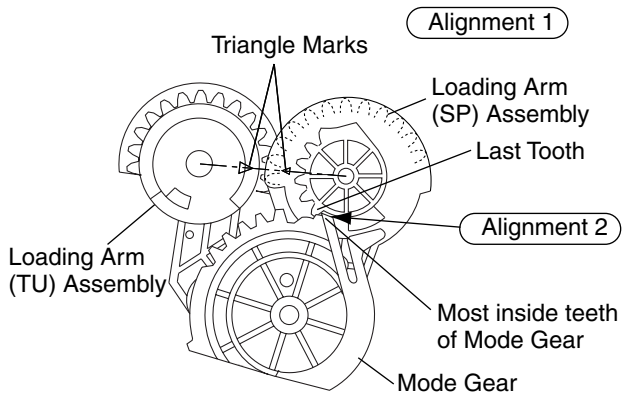


Fig. AL2

Alignment 3

Cam Gear (A), Rack Assembly

Install the Rack Assembly so that the first tooth on the gear of the Rack Assembly meets the first groove on the Cam Gear (A) as shown in Fig. AL3.

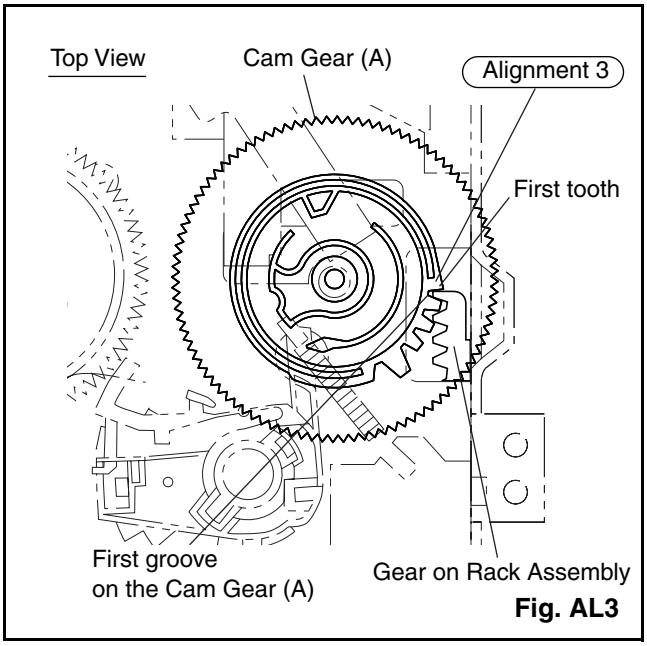


Fig. AL3

EXPLODED VIEWS AND PARTS LIST SECTION

VIDEO CASSETTE RECORDER

DCV203/DCV603

Sec. 3: Exploded views and Parts List Section
- **Exploded views**
- **Parts List**

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Mechanical Parts List 3-2-1
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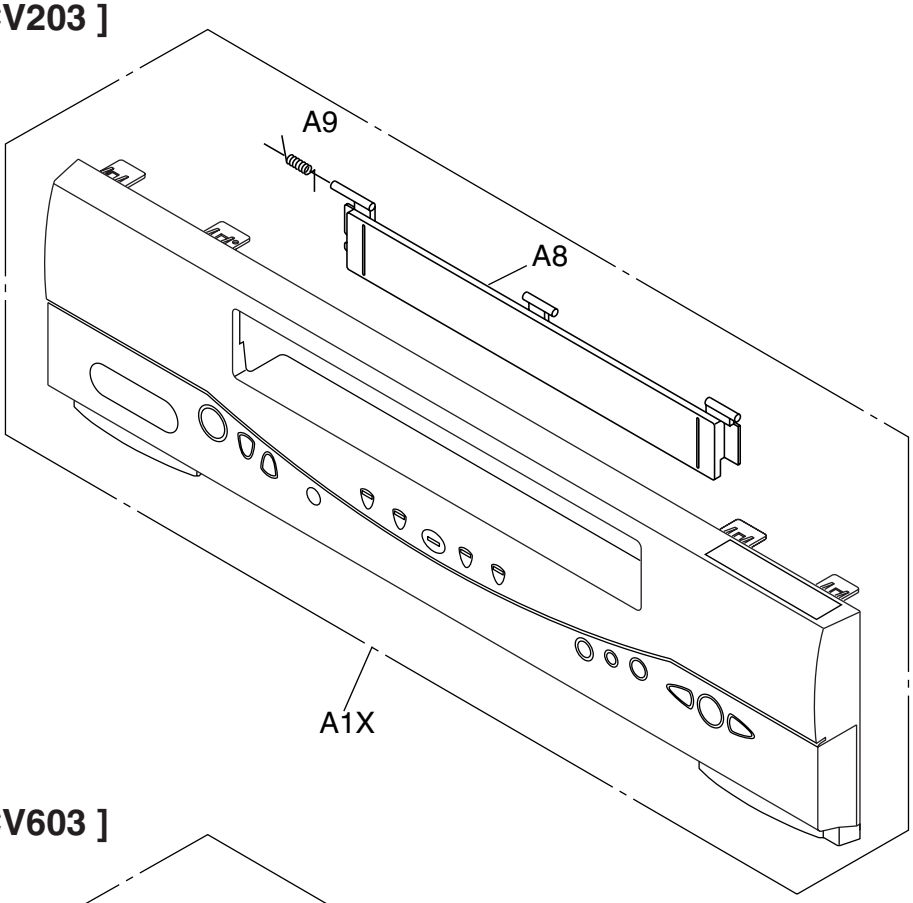
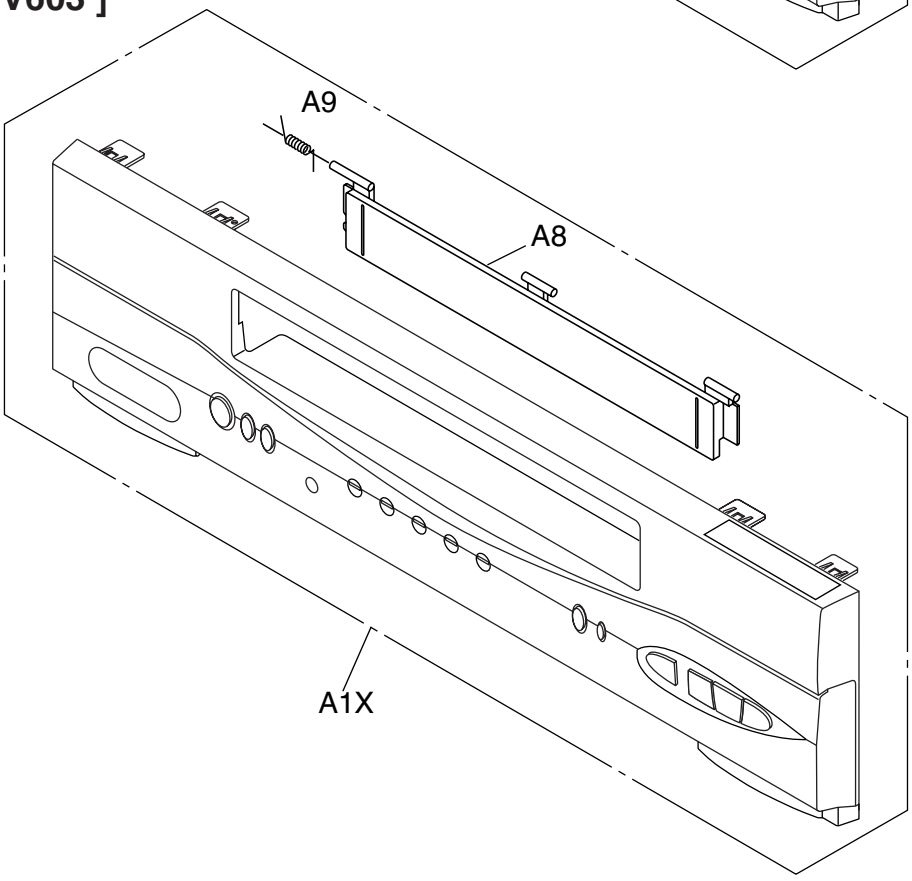
EXPLODED VIEWS

Front Panel

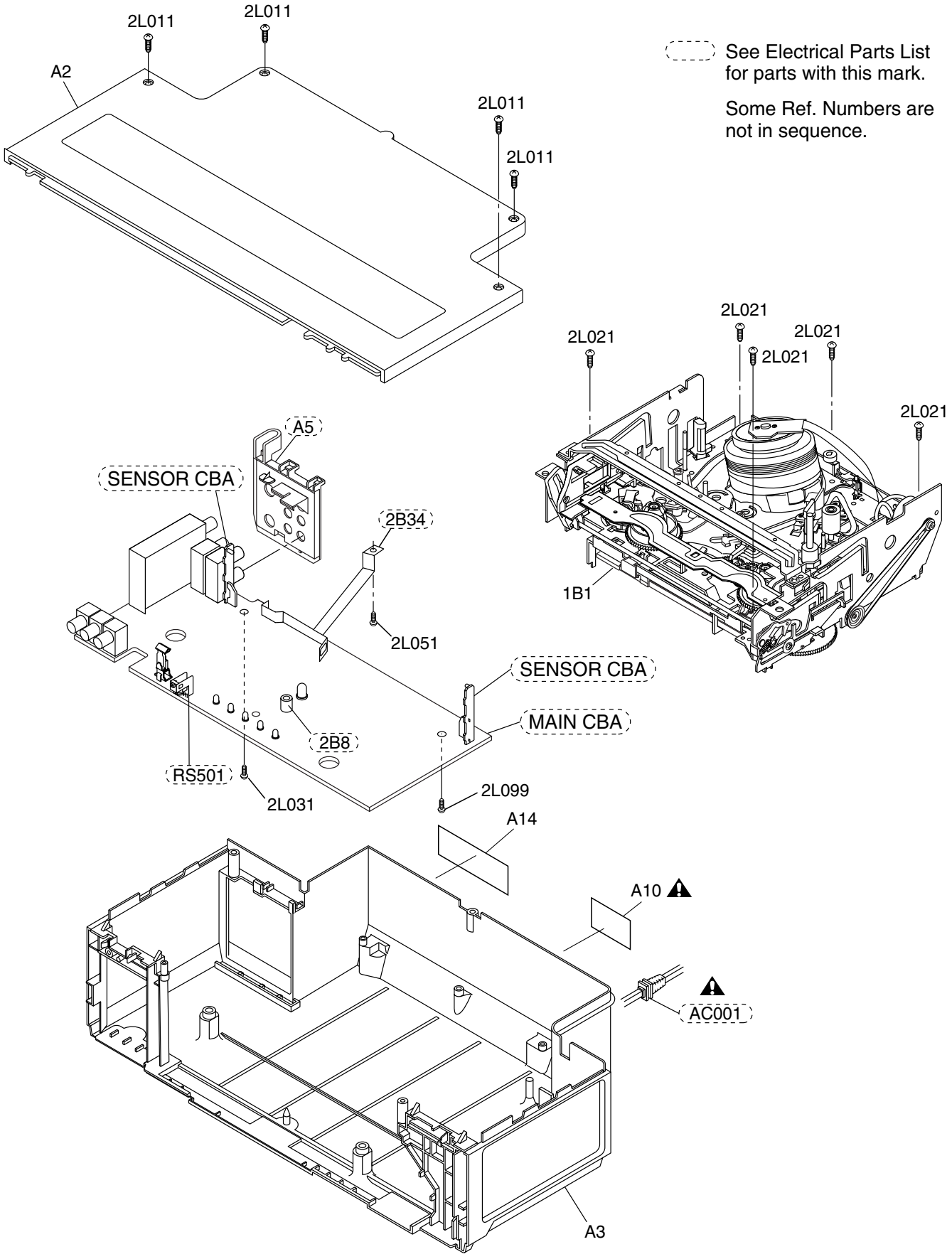
[DCV203]



[DCV603]

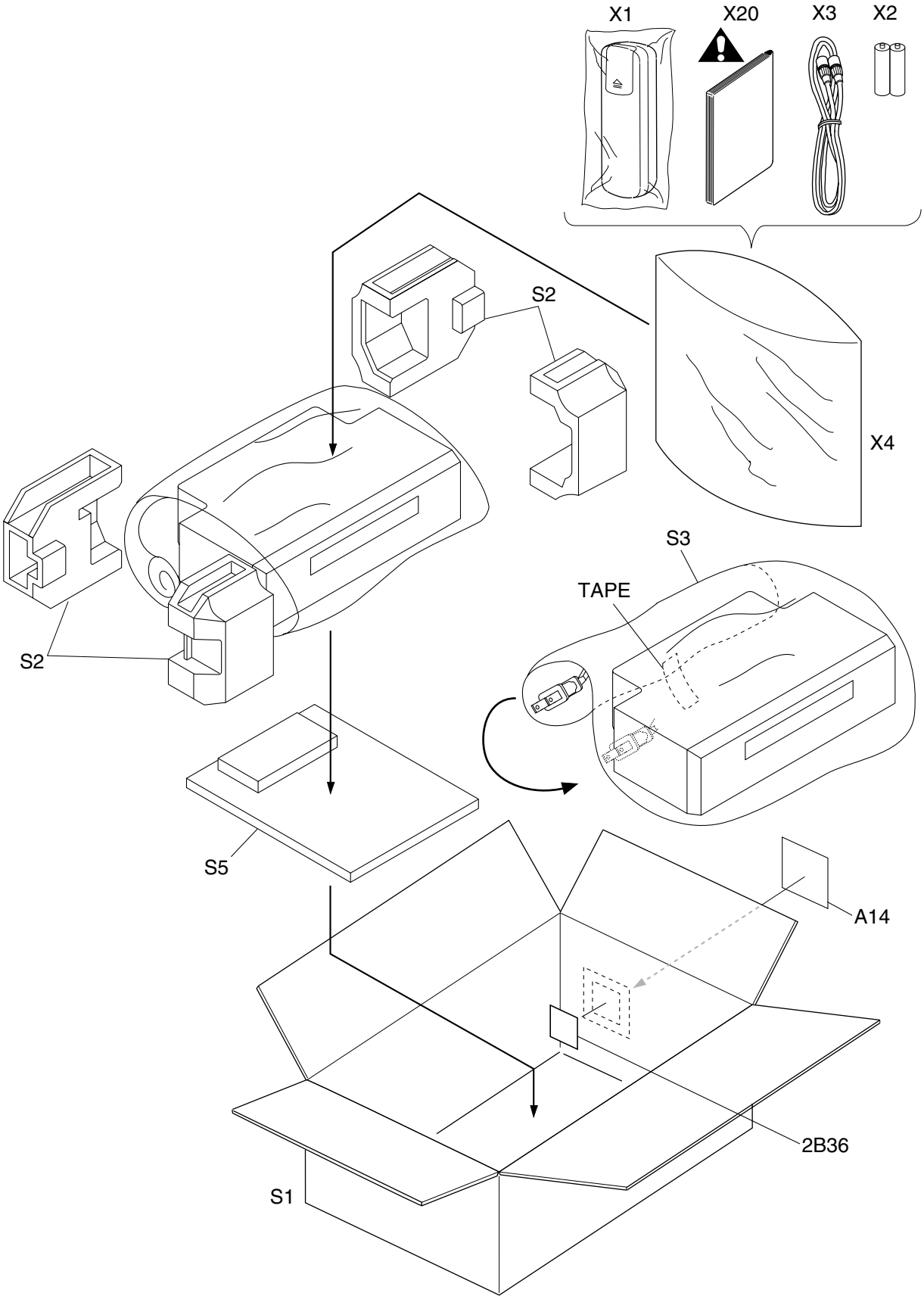


Cabinet


2L011
2L011
A2
2L011
2L011
See Electrical Parts List for parts with this mark.
Some Ref. Numbers are not in sequence.
2L021
2L021
2L021
2L021
2L021
1B1
A5
SENSOR CBA
2B34
2L051
SENSOR CBA
MAIN CBA
2B8
RS501
2L031
2L099
A14
A10
AC001
A3

Some Ref. Numbers are not in sequence.

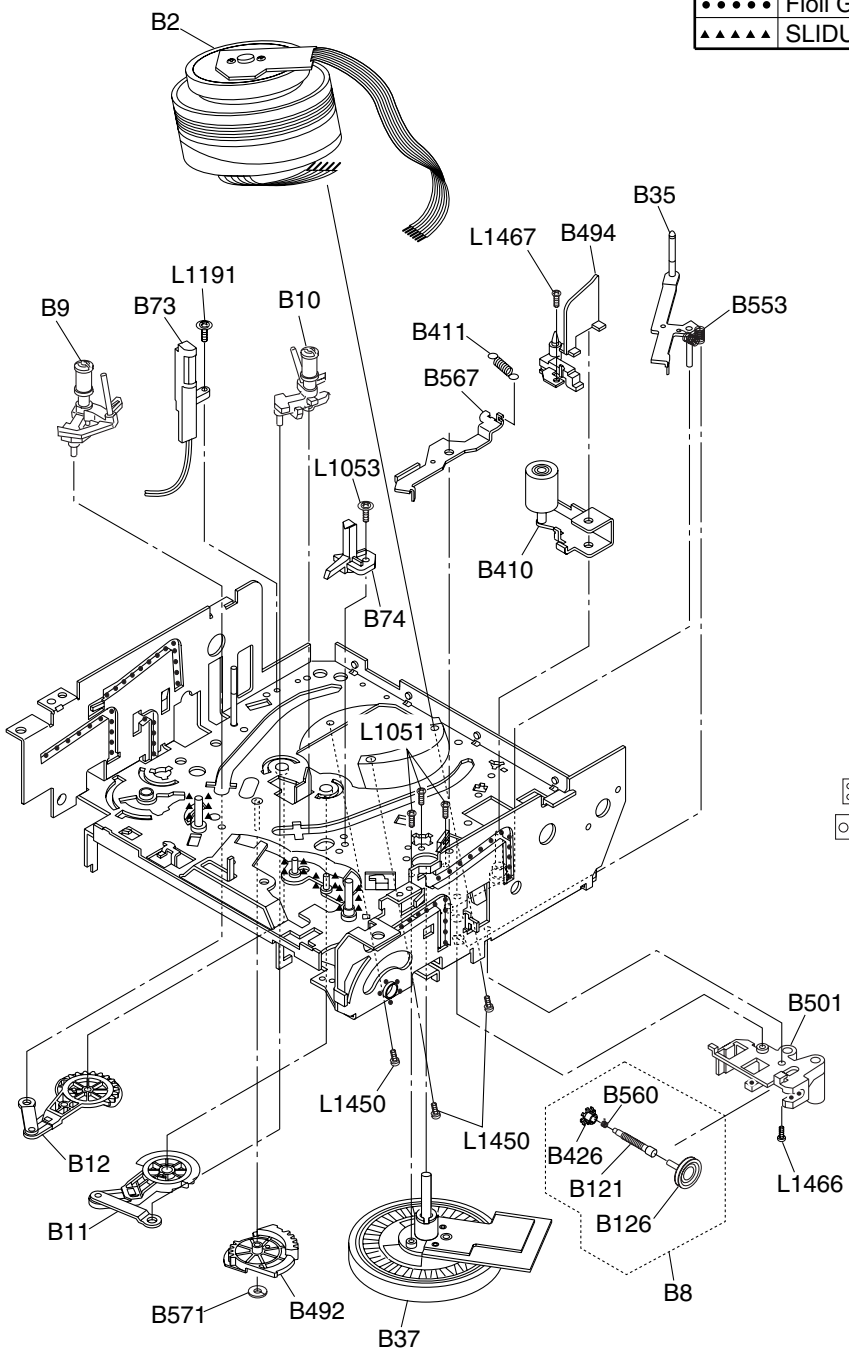
Packing

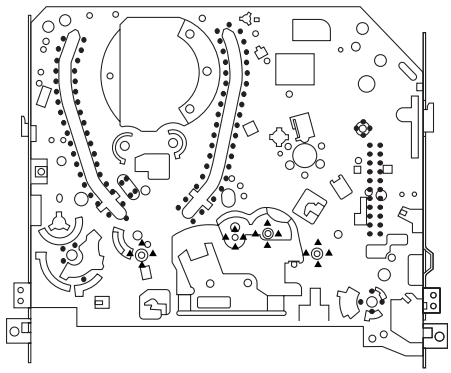


DECK EXPLODED VIEWS

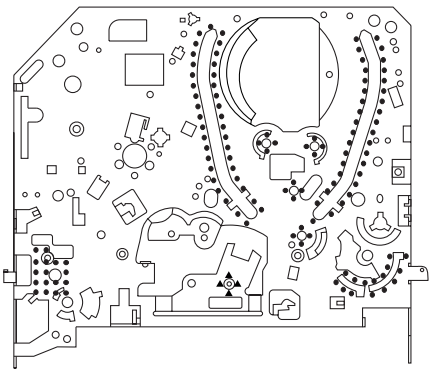
Deck Mechanism View 1

Mark	Description
●●●●●	Floil G-684G or Multemp MH-D (Blue grease)
▲▲▲▲▲	SLIDUS OIL #150





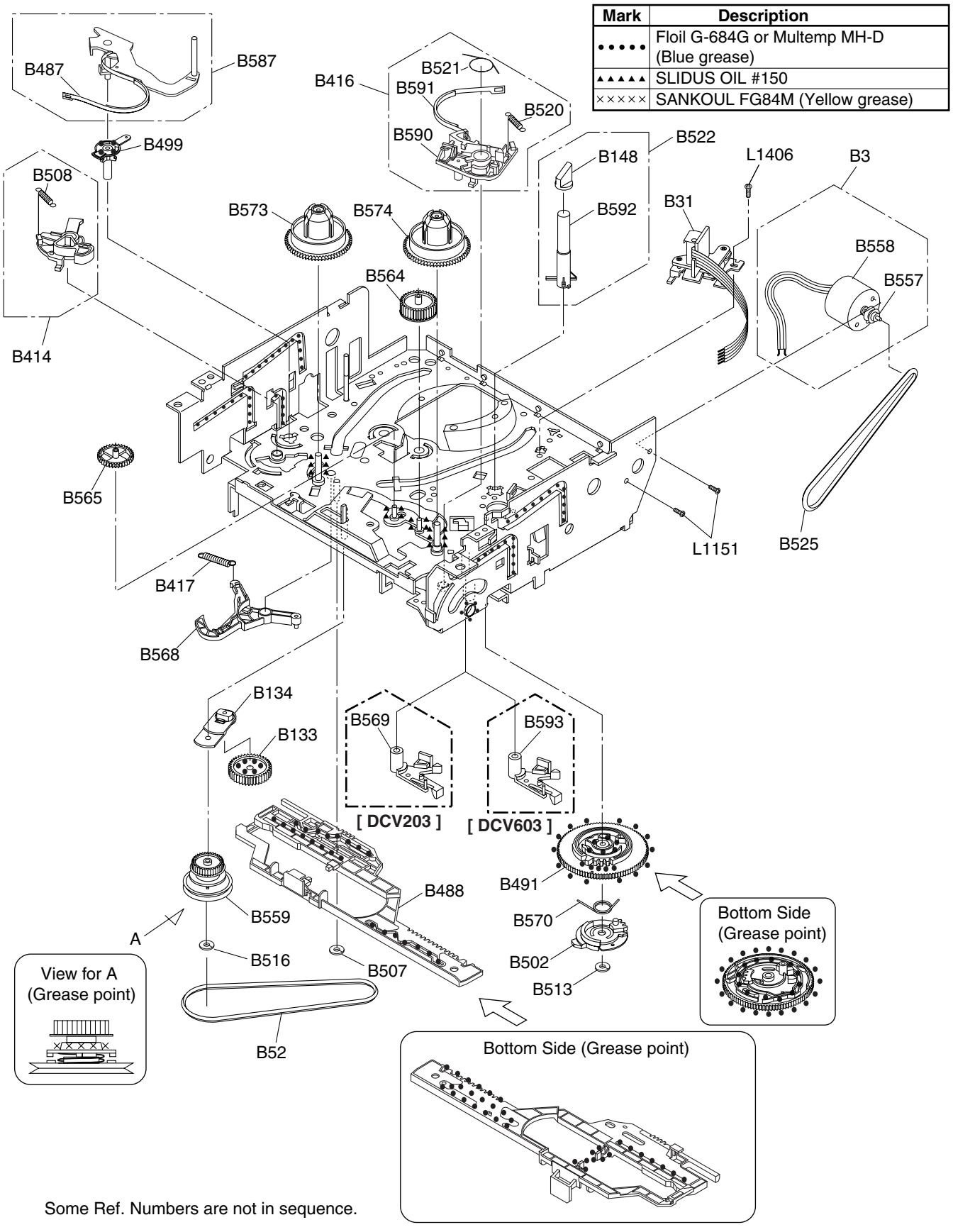
Chassis Assembly
Top View (Lubricating Point)



Chassis Assembly
Bottom View (Lubricating Point)

Some Ref. Numbers are not in sequence.

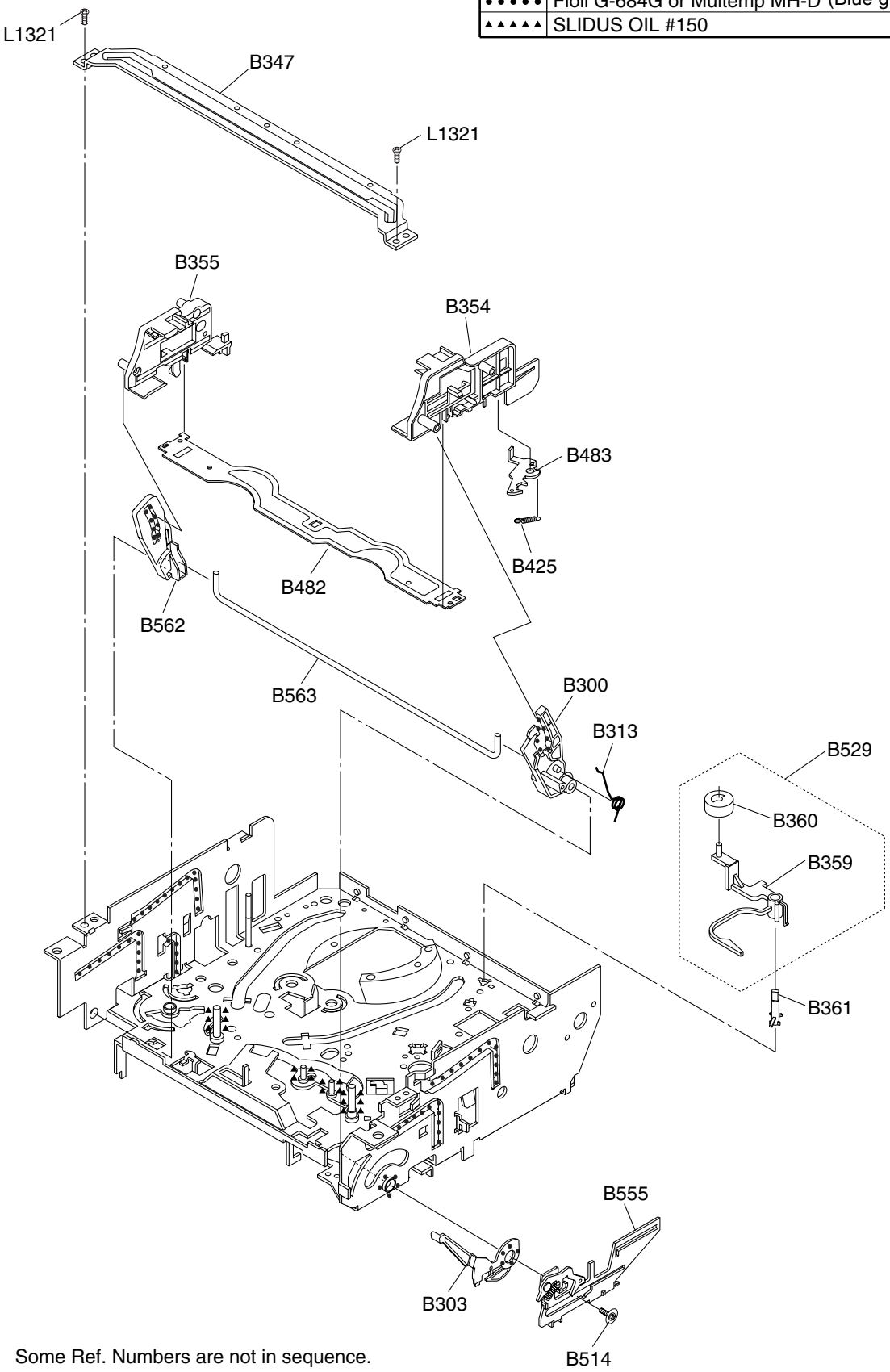
Deck Mechanism View 2



Some Ref. Numbers are not in sequence.

Deck Mechanism View 3

Mark	Description
●●●●●	Floil G-684G or Multemp MH-D (Blue grease)
▲▲▲▲▲	SLIDUS OIL #150



Some Ref. Numbers are not in sequence.

		20030218	
		DCV203/603 (HD230/441CD)	
	Mark	Model	
	A	DCV203 (HD230CD)	
	B	DCV603 (HD441CD)	
Ref No.	Mark	Description	Parts No.
MECHANICAL PARTS LIST			
A1X	A	FRONT ASSEMBLY HD230CD	0VM204168
A1X	B	FRONT ASSEMBLY HD441CD	0VM204049
A2	A	CASE, TOP(U27) HD400UD	0VM101186
A2	B	CASE, TOP HD450CD	0VM306022
A3	A	CHASSIS(CANADA) HD230CD	0VM204157
A3	B	CHASSIS(CANADA) HD450CD	0VM203914
A8	A	DOOR, CASSETTE HD230CD	0VM415206
A8	B	DOOR, CASSETTE HD441CD	0VM415202
A9		SPRING, DOOR H7220UD U15	0VM408617
A10!	A	LABEL, RATING HD230CD	----------
A10!	B	LABEL, RATING HD441CD	----------
A14		LABEL, BAR CODE HB400UD	----------
A14	A	LABEL, BAR CODE HD230CD	----------
A14	B	LABEL, BAR CODE HD441CD	----------
1B1	A	DECK ASSEMBLY CZD012/VM162U	N162UFL
1B1	B	DECK ASSEMBLY CZD012/VM166U	N166UFL
2B36		LABEL, EAS L0951UB	----------
2L011		SCREW, P-TIGHT 3X10 BIND HEAD+	GBEP3100
2L021		SCREW, P-TIGHT M3X10 WASHER HEAD+	GCMP3100
2L031		SCREW, S-TIGHT M3X6 BIND HEAD+	GBMS3060
2L051		SCREW, S-TIGHT M3X6 BIND HEAD+	GBMS3060
2L099		SCREW, P-TIGHT M3X8 BIND HEAD+	GBCP3080
S1	A	GIFT BOX CARTON HD230CD	0VM306267
S1	B	GIFT BOX CARTON HD441CD	0VM306268
S2		STYROFOAM(F/C-U27) HD400UD	0VM203814
S3		UNIT, BAG V4010PA	0VM406453B
S5		PAD HD400UD	0VM414408A
X1	A	REMOTE CONTROL UNIT 364/CRC007	NA310UD
X1	B	REMOTE CONTROL UNIT 364/CRC007	NA312UD
X1		REMOTE CONTROL UNIT 364/CRC007	NA362UD
X2		DRY BATTERY R6P/2S	XB0M451T0001
X2		DRY BATTERY ES-GR6M-C	XB0M571GLP01
X3		RF CABLE 2.5C-2V	WPZ0901TM002
X4		ACCESSORY BAG H3600UD T=0.03	0VM409454A
X20!	A	OWNER'S MANUAL HD230CD	0VMN03674
X20!	B	OWNER'S MANUAL HD441CD	0VMN03673
ELECTRICAL PARTS LIST			
	A	MCV CBA	0VSA14022
	B	MCV CBA	0VSA13475
		Consists of the following:	
		MAIN CBA	----------
		SENSOR CBA	0VSA13474
		MAIN CBA	----------
2B8		BUSH, LED(F) H3700UD	0VM409508
2B34		SHIELD, HEAD HD400UD	0VM305875

A5	A	JACK BOARD(MONO) HD200UD	0VM203803
A5	B	JACK BOARD(HIFI) HD400UD	0VM203804
AC001!		AC CORD A0A0280-007	WAC0172LTE04
AC001!		AC CORD PB8K9F9110A-057	WAC0172LW008
C001!		METALLIZED FILM CAP. 0.01UF/275V K	CT2E103HJE13
C001!		METALLIZED FILM CAP. 0.01UF/275V K	CT2E103HJE05
C001!		METALLIZED FILM CAP. 0.01UF/250V K	CT2E103DC011
C002!		SAFETY CAP. 2200PF/250V	CCG2EMA0F222
C002!		SAFETY CAP. 2200PF/250V	CCD2EMA0E222
C003		ELECTROLYTIC CAP. 82UF/200V M	CA2D820S6014
C003		ELECTROLYTIC CAP. 82UF/200V M	CA2D820NC088
C004		CERAMIC CAP. B K 120PF/500V	CCD2JKP0B121
C007		CERAMIC CAP.(AX) X K 3300PF/16V	CCA1CKT0X332
C009		CERAMIC CAP.(AX) X K 5600PF/16V	CCA1CKT0X562
C013		ELECTROLYTIC CAP. 10UF/50V M H7	CE1JMAVSL100
C018		ELECTROLYTIC CAP. 470UF/16V M	CE1CMASDL471
C018		ELECTROLYTIC CAP. 470UF/16V M	CE1CMASTL471
C020		ELECTROLYTIC CAP. 1000UF/10V M	CE1AMZPDL102
C020		ELECTROLYTIC CAP. 1000UF/10V M	CE1AMZPTL102
C021		ELECTROLYTIC CAP. 100UF/6.3V M H7	CE0KMASSL101
C024		CERAMIC CAP.(AX) B K 390PF/50V	CCA1JKT0B391
C026		ELECTROLYTIC CAP. 2.2UF/250V M	CA2E2R2S6009
C026		ELECTROLYTIC CAP. 2.2UF/250V M(105°C)	CE2EMASTH2R2
C030		CERAMIC CAP.(AX) X K 5600PF/16V	CCA1CKT0X562
C051	B	ELECTROLYTIC CAP. 10UF/16V M H7	CE1CMAVSL100
C060		CHIP CERAMIC CAP. B K 0.1UF/25V	CHD1EKB0B104
C060		CHIP CERAMIC CAP. B K 0.1UF/16V	CHD1CKB0B104
C060		CHIP CERAMIC CAP. B K 0.1UF/25V	CHD1EK30B104
C060		CHIP CERAMIC CAP. B K 0.1UF/16V	CHD1CK30B104
C071		CERAMIC CAP.(AX) B K 150PF/50V	CCA1JKT0B151
C253		ELECTROLYTIC CAP. 1UF/50V M H7	CE1JMAVSL1R0
C255		CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V	CZM1CZB0F103
C255		CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V	CZM1CZ30F103
C256		ELECTROLYTIC CAP. 47UF/6.3V M H7	CE0KMAVSL470
C257		CHIP CERAMIC CAP. F Z 0.1UF/50V	CHD1JZB0F104
C257		CHIP CERAMIC CAP. F Z 0.1UF/25V	CHD1EZB0F104
C257		CHIP CERAMIC CAP. F Z 0.1UF/50V	CHD1JZ30F104
C257		CHIP CERAMIC CAP. F Z 0.1UF/25V	CHD1EZ30F104
C257		CHIP CERAMIC CAP. FZ Z 0.1UF/50V	CHD1JZ3FZ104
C258		CHIP CERAMIC CAP.(MELF) SL J 100PF/50V	CZM1JJBSL101
C258		CHIP CERAMIC CAP.(MELF) SL J 100PF/50V	CZM1JJ3SL101
C258		CHIP CERAMIC CAP. CH J 100PF/50V	CHD1JJBCH101
C258		CHIP CERAMIC CAP. CH J 100PF/50V	CHD1JJ3CH101
C258		CHIP CERAMIC CAP. CG J 100PF/50V	CHD1JJ3CG101
C308		ELECTROLYTIC CAP. 1UF/50V M H7	CE1JMAVSL1R0
C309		ELECTROLYTIC CAP. 47UF/6.3V M H7	CE0KMAVSL470
C310		CHIP CERAMIC CAP. F Z 0.1UF/50V	CHD1JZB0F104
C310		CHIP CERAMIC CAP. F Z 0.1UF/25V	CHD1EZB0F104
C310		CHIP CERAMIC CAP. F Z 0.1UF/50V	CHD1JZ30F104
C310		CHIP CERAMIC CAP. F Z 0.1UF/25V	CHD1EZ30F104
C310		CHIP CERAMIC CAP. FZ Z 0.1UF/50V	CHD1JZ3FZ104
C311		CHIP CERAMIC CAP. CH J 390PF/50V	CHD1JJBCH391
C311		CHIP CERAMIC CAP. CH J 390PF/50V	CHD1JJ3CH391
C311		CHIP CERAMIC CAP. CG J 390PF/50V	CHD1JJ3CG391
C312		CHIP CERAMIC CAP. F Z 1UF/10V	CHD1AZB0F105
C312		CHIP CERAMIC CAP. F Z 1UF/10V	CHD1AZ30F105
C314		CHIP CERAMIC CAP.(MELF) SL J 100PF/50V	CZM1JJBSL101

C314		CHIP CERAMIC CAP.(MELF) SL J 100PF/50V	CZM1JJ3SL101
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C314		CHIP CERAMIC CAP. CG J 100PF/50V	CHD1JJ3CG101
C315		CHIP CERAMIC CAP.(MELF) SL J 100PF/50V	CZM1JJBSL101
C315		CHIP CERAMIC CAP.(MELF) SL J 100PF/50V	CZM1JJ3SL101
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C315		CHIP CERAMIC CAP. CG J 100PF/50V	CHD1JJ3CG101
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C321		ELECTROLYTIC CAP. 1UF/50V M H7	CE1JMAVSL1R0
C322		ELECTROLYTIC CAP. 1UF/50V M	CE1JMASDL1R0
C322		ELECTROLYTIC CAP. 1UF/50V M	CE1JMASTL1R0
C324		ELECTROLYTIC CAP. 1UF/50V M H7	CE1JMAVSL1R0
C325		ELECTROLYTIC CAP. 1UF/50V M H7	CE1JMAVSL1R0
C326		ELECTROLYTIC CAP. 22UF/6.3V M H7	CE0KMAVSL220
C328	B	CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V	CZM1CZB0F103
C328	B	CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V	CZM1CZ30F103
C329		CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V	CZM1CZB0F103
C329		CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V	CZM1CZ30F103
C330		CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V	CZM1CZB0F103
C330		CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V	CZM1CZ30F103
C332		CHIP CERAMIC CAP. B K 0.01UF/50V	CHD1JKB0B103
C332		CHIP CERAMIC CAP. B K 0.01UF/50V	CHD1JK30B103
C333		ELECTROLYTIC CAP. 1UF/50V M H7	CE1JMAVSL1R0
C335		CHIP CERAMIC CAP. F Z 0.1UF/50V	CHD1JZB0F104
C335		CHIP CERAMIC CAP. F Z 0.1UF/25V	CHD1EZB0F104
C335		CHIP CERAMIC CAP. F Z 0.1UF/50V	CHD1JZ30F104
C335		CHIP CERAMIC CAP. F Z 0.1UF/25V	CHD1EZ30F104
C335		CHIP CERAMIC CAP. FZ Z 0.1UF/50V	CHD1JZ3FZ104
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C336		CHIP CERAMIC CAP. B K 0.047UF/25V	CHD1EKB0B473
C336		CHIP CERAMIC CAP. B K 0.047UF/50V	CHD1JK30B473
C336		CHIP CERAMIC CAP. B K 0.047UF/25V	CHD1EK30B473
C337		ELECTROLYTIC CAP. 47UF/6.3V M H7	CE0KMAVSL470
C339		ELECTROLYTIC CAP. 1UF/50V M H7	CE1JMAVSL1R0
C340		ELECTROLYTIC CAP. 1UF/50V M H7	CE1JMAVSL1R0
C341		CHIP CERAMIC CAP. B K 0.01UF/50V	CHD1JKB0B103
C341		CHIP CERAMIC CAP. B K 0.01UF/50V	CHD1JK30B103
C344		ELECTROLYTIC CAP. 1UF/50V M H7	CE1JMAVSL1R0
C345		CHIP CERAMIC CAP. B K 0.01UF/50V	CHD1JKB0B103
C345		CHIP CERAMIC CAP. B K 0.01UF/50V	CHD1JK30B103
C346		CHIP CERAMIC CAP. F Z 1UF/10V	CHD1AZB0F105
C346		CHIP CERAMIC CAP. F Z 1UF/10V	CHD1AZ30F105
C347		CHIP CERAMIC CAP. F Z 1UF/10V	CHD1AZB0F105
C347		CHIP CERAMIC CAP. F Z 1UF/10V	CHD1AZ30F105
C348		CHIP CERAMIC CAP. B K 0.047UF/50V	CHD1JKB0B473
C348		CHIP CERAMIC CAP. B K 0.047UF/25V	CHD1EKB0B473
C348		CHIP CERAMIC CAP. B K 0.047UF/50V	CHD1JK30B473
C348		CHIP CERAMIC CAP. B K 0.047UF/25V	CHD1EK30B473
C349		CHIP CERAMIC CAP. B K 0.047UF/50V	CHD1JKB0B473
C349		CHIP CERAMIC CAP. B K 0.047UF/25V	CHD1EKB0B473
C349		CHIP CERAMIC CAP. B K 0.047UF/50V	CHD1JK30B473
C349		CHIP CERAMIC CAP. B K 0.047UF/25V	CHD1EK30B473
C352		CHIP CERAMIC CAP. B K 0.047UF/50V	CHD1JKB0B473
C352		CHIP CERAMIC CAP. B K 0.047UF/25V	CHD1EKB0B473
C352		CHIP CERAMIC CAP. B K 0.047UF/50V	CHD1JK30B473

C352		CHIP CERAMIC CAP. B K 0.047UF/25V	CHD1EK30B473
C353		CHIP CERAMIC CAP. B K 0.01UF/50V	CHD1JKB0B103
C353		CHIP CERAMIC CAP. B K 0.01UF/50V	CHD1JK30B103
C354	B	CHIP CERAMIC CAP. CH J 68PF/50V	CHD1JJBCH680
C354	B	CHIP CERAMIC CAP. CH J 68PF/50V	CHD1JJ3CH680
C354	B	CHIP CERAMIC CAP. CG J 68PF/50V	CHD1JJ3CG680
C391	A	ELECTROLYTIC CAP. 47UF/16V M	CE1CMASDL470
C391	A	ELECTROLYTIC CAP. 47UF/16V M	CE1CMASTL470
C391	B	ELECTROLYTIC CAP. 100UF/10V M	CE1AMASDL101
C391	B	ELECTROLYTIC CAP. 100UF/10V M	CE1AMASTL101
C392		ELECTROLYTIC CAP. 470UF/6.3V M	CE0KMASDL471
C392		ELECTROLYTIC CAP. 470UF/6.3V M	CE0KMASTL471
C393		CHIP CERAMIC CAP. B K 1000PF/50V	CHD1JKB0B102
C393		CHIP CERAMIC CAP. B K 1000PF/50V	CHD1JK30B102
C401		CHIP CERAMIC CAP. F Z 0.1UF/50V	CHD1JZB0F104
C401		CHIP CERAMIC CAP. F Z 0.1UF/25V	CHD1EZB0F104
C401		CHIP CERAMIC CAP. F Z 0.1UF/50V	CHD1JZ30F104
C401		CHIP CERAMIC CAP. F Z 0.1UF/25V	CHD1EZ30F104
C401		CHIP CERAMIC CAP. FZ Z 0.1UF/50V	CHD1JZ3FZ104
C402	A	CHIP CERAMIC CAP. F Z 0.1UF/50V	CHD1JZB0F104
C402	A	CHIP CERAMIC CAP. F Z 0.1UF/25V	CHD1EZB0F104
C402	A	CHIP CERAMIC CAP. F Z 0.1UF/50V	CHD1JZ30F104
C402	A	CHIP CERAMIC CAP. F Z 0.1UF/25V	CHD1EZ30F104
C402	A	CHIP CERAMIC CAP. FZ Z 0.1UF/50V	CHD1JZ3FZ104
C403	A	CHIP CERAMIC CAP. F Z 0.1UF/50V	CHD1JZB0F104
C403	A	CHIP CERAMIC CAP. F Z 0.1UF/25V	CHD1EZB0F104
C403	A	CHIP CERAMIC CAP. F Z 0.1UF/50V	CHD1JZ30F104
C403	A	CHIP CERAMIC CAP. F Z 0.1UF/25V	CHD1EZ30F104
C403	A	CHIP CERAMIC CAP. FZ Z 0.1UF/50V	CHD1JZ3FZ104
C404		ELECTROLYTIC CAP. 22UF/6.3V M H7	CE0KMAVSL220
C405		ELECTROLYTIC CAP. 33UF/6.3V M H7	CE0KMAVSL330
C406		CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V	CZM1CZB0F103
C406		CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V	CZM1CZ30F103
C408		ELECTROLYTIC CAP. 4.7UF/25V M H7	CE1EMAVSL4R7
C409		CHIP CERAMIC CAP.(MELF) Y K 6800PF/16V	CZM1CKB0Y682
C409		CHIP CERAMIC CAP.(MELF) Y K 6800PF/16V	CZM1CK30Y682
C410		CHIP CERAMIC CAP. F Z 0.1UF/50V	CHD1JZB0F104
C410		CHIP CERAMIC CAP. F Z 0.1UF/25V	CHD1EZB0F104
C410		CHIP CERAMIC CAP. F Z 0.1UF/50V	CHD1JZ30F104
C410		CHIP CERAMIC CAP. F Z 0.1UF/25V	CHD1EZ30F104
C410		CHIP CERAMIC CAP. FZ Z 0.1UF/50V	CHD1JZ3FZ104
C411		CHIP CERAMIC CAP.(MELF) Y K 2200PF/35V	CZM1GKB0Y222
C411		CHIP CERAMIC CAP.(MELF) Y K 2200PF/35V	CZM1GK30Y222
C411		CHIP CERAMIC CAP. B K 2200PF/50V	CHD1JKB0B222
C411		CHIP CERAMIC CAP. B K 2200PF/50V	CHD1JK30B222
C413		CHIP CERAMIC CAP. B K 0.012UF/50V	CHD1JKB0B123
C413		CHIP CERAMIC CAP. B K 0.012UF/50V	CHD1JK30B123
C415		ELECTROLYTIC CAP. 10UF/16V M H7	CE1CMAVSL100
C417		CHIP CERAMIC CAP.(MELF) Y K 1000PF/35V	CZM1GKB0Y102
C417		CHIP CERAMIC CAP.(MELF) Y K 1000PF/35V	CZM1GK30Y102
C418		CHIP CERAMIC CAP. B K 2700PF/50V	CHD1JKB0B272
C418		CHIP CERAMIC CAP. B K 2700PF/50V	CHD1JK30B272
C419		CHIP CERAMIC CAP. B K 0.01UF/50V	CHD1JKB0B103
C419		CHIP CERAMIC CAP. B K 0.01UF/50V	CHD1JK30B103
C421	B	ELECTROLYTIC CAP. 47UF/6.3V M H7	CE0KMAVSL470
C422		ELECTROLYTIC CAP. 47UF/6.3V M H7	CE0KMAVSL470
C423		ELECTROLYTIC CAP. 220UF/6.3V M H7	CE0KMAVSL221

C424		CERAMIC CAP. B K 470PF/100V	CCD2AKS0B471
C448	B	ELECTROLYTIC CAP. 4.7UF/50V M H7	CE1JMAVSL4R7
C449	B	ELECTROLYTIC CAP. 4.7UF/50V M H7	CE1JMAVSL4R7
C451	B	ELECTROLYTIC CAP. 47UF/16V M H7	CE1CMAVSL470
C452	B	ELECTROLYTIC CAP. 1UF/50V M H7	CE1JMAVSL1R0
C453	B	ELECTROLYTIC CAP. 10UF/16V M H7	CE1CMAVSL100
C454	B	ELECTROLYTIC CAP. 1UF/50V M H7	CE1JMAVSL1R0
C455	B	ELECTROLYTIC CAP. 22UF/6.3V M H7	CE0KMAVSL220
C456	B	ELECTROLYTIC CAP. 10UF/16V M H7	CE1CMAVSL100
C457	B	ELECTROLYTIC CAP. 4.7UF/25V M H7	CE1EMAVSL4R7
C458	B	CHIP CERAMIC CAP. B K 0.01UF/50V	CHD1JKB0B103
C458	B	CHIP CERAMIC CAP. B K 0.01UF/50V	CHD1JK30B103
C459	B	ELECTROLYTIC CAP. 22UF/6.3V M H7	CE0KMAVSL220
C460	B	CHIP CERAMIC CAP.(MELF) Y K 4700PF/16V	CZM1CKB0Y472
C460	B	CHIP CERAMIC CAP.(MELF) Y K 4700PF/16V	CZM1CK30Y472
C461	B	CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V	CZM1CZB0F103
C461	B	CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V	CZM1CZ30F103
C462	B	CHIP CERAMIC CAP. B K 0.01UF/50V	CHD1JKB0B103
C462	B	CHIP CERAMIC CAP. B K 0.01UF/50V	CHD1JK30B103
C463	B	CHIP CERAMIC CAP. B K 0.1UF/25V	CHD1EKB0B104
C463	B	CHIP CERAMIC CAP. B K 0.1UF/16V	CHD1CKB0B104
C463	B	CHIP CERAMIC CAP. B K 0.1UF/25V	CHD1EK30B104
C463	B	CHIP CERAMIC CAP. B K 0.1UF/16V	CHD1CK30B104
C465	B	ELECTROLYTIC CAP. 4.7UF/25V M H7	CE1EMAVSL4R7
C466		ELECTROLYTIC CAP. 220UF/6.3V M H7	CE0KMAVSL221
C467	B	CHIP CERAMIC CAP. B K 0.022UF/50V	CHD1JKB0B223
C467	B	CHIP CERAMIC CAP. B K 0.022UF/25V	CHD1EKB0B223
C467	B	CHIP CERAMIC CAP. B K 0.022UF/50V	CHD1JK30B223
C467	B	CHIP CERAMIC CAP. B K 0.022UF/25V	CHD1EK30B223
C470	B	CERAMIC CAP.(AX) F Z 0.1UF/50V	CCA1JZTFZ104
C471	B	ELECTROLYTIC CAP. 22UF/6.3V M H7	CE0KMAVSL220
C472	B	CHIP CERAMIC CAP.(MELF) Y K 4700PF/16V	CZM1CKB0Y472
C472	B	CHIP CERAMIC CAP.(MELF) Y K 4700PF/16V	CZM1CK30Y472
C473	B	CHIP CERAMIC CAP. B K 0.01UF/50V	CHD1JKB0B103
C473	B	CHIP CERAMIC CAP. B K 0.01UF/50V	CHD1JK30B103
C474	B	ELECTROLYTIC CAP. 4.7UF/25V M H7	CE1EMAVSL4R7
C475	B	ELECTROLYTIC CAP. 10UF/16V M H7	CE1CMAVSL100
C476	B	CHIP CERAMIC CAP. F Z 1UF/10V	CHD1AZB0F105
C476	B	CHIP CERAMIC CAP. F Z 1UF/10V	CHD1AZ30F105
C477	B	ELECTROLYTIC CAP. 2.2UF/50V M H7	CE1JMAVSL2R2
C478	B	ELECTROLYTIC CAP. 1UF/50V M H7	CE1JMAVSL1R0
C479	B	CHIP CERAMIC CAP. B K 0.022UF/50V	CHD1JKB0B223
C479	B	CHIP CERAMIC CAP. B K 0.022UF/25V	CHD1EKB0B223
C479	B	CHIP CERAMIC CAP. B K 0.022UF/50V	CHD1JK30B223
C479	B	CHIP CERAMIC CAP. B K 0.022UF/25V	CHD1EK30B223
C480	B	ELECTROLYTIC CAP. 1UF/50V M H7	CE1JMAVSL1R0
C481	B	ELECTROLYTIC CAP. 1UF/50V M H7	CE1JMAVSL1R0
C483	B	CHIP CERAMIC CAP. F Z 0.1UF/50V	CHD1JZB0F104
C483	B	CHIP CERAMIC CAP. F Z 0.1UF/25V	CHD1EZB0F104
C483	B	CHIP CERAMIC CAP. F Z 0.1UF/50V	CHD1JZ30F104
C483	B	CHIP CERAMIC CAP. F Z 0.1UF/25V	CHD1EZ30F104
C483	B	CHIP CERAMIC CAP. FZ Z 0.1UF/50V	CHD1JZ3FZ104
C484	B	ELECTROLYTIC CAP. 2.2UF/50V M H7	CE1JMAVSL2R2
C485	B	ELECTROLYTIC CAP. 4.7UF/25V M H7	CE1EMAVSL4R7
C486	B	ELECTROLYTIC CAP. 1UF/50V M H7	CE1JMAVSL1R0
C487	B	ELECTROLYTIC CAP. 4.7UF/25V M H7	CE1EMAVSL4R7
C488	B	CHIP CERAMIC CAP. F Z 1UF/10V	CHD1AZB0F105

C488	B	CHIP CERAMIC CAP. F Z 1UF/10V	CHD1AZ30F105
C489	B	ELECTROLYTIC CAP. 1UF/50V M H7	CE1JMAVSL1R0
C491	B	ELECTROLYTIC CAP. 4.7UF/25V M H7	CE1EMAVSL4R7
C492	B	ELECTROLYTIC CAP. 22UF/16V M H7	CE1CMAVSL220
C493	B	ELECTROLYTIC CAP. 4.7UF/25V M H7	CE1EMAVSL4R7
C494	B	ELECTROLYTIC CAP. 22UF/16V M H7	CE1CMAVSL220
C495	B	CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V	CZM1CZB0F103
C495	B	CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V	CZM1CZ30F103
C496	B	ELECTROLYTIC CAP. 4.7UF/25V M H7	CE1EMAVSL4R7
C498	B	ELECTROLYTIC CAP. 4.7UF/25V M H7	CE1EMAVSL4R7
C499	B	ELECTROLYTIC CAP. 4.7UF/25V M H7	CE1EMAVSL4R7
C502		ELECTROLYTIC CAP. 220UF/6.3V M H7	CE0KMAVSL221
C505		ELECTROLYTIC CAP. 22UF/10V M H7	CE1AMAVSL220
C507		ELECTROLYTIC CAP. 1UF/50V M H7	CE1JMAVSL1R0
C508		CHIP CERAMIC CAP. B K 0.022UF/50V	CHD1JKB0B223
C508		CHIP CERAMIC CAP. B K 0.022UF/25V	CHD1EKB0B223
C508		CHIP CERAMIC CAP. B K 0.022UF/50V	CHD1JK30B223
C508		CHIP CERAMIC CAP. B K 0.022UF/25V	CHD1EK30B223
C509		ELECTROLYTIC CAP. 330UF/6.3V M H7	CE0KMASSL331
C511		CHIP CERAMIC CAP. CH J 22PF/50V	CHD1JJBCH220
C511		CHIP CERAMIC CAP. CH J 22PF/50V	CHD1JJ3CH220
C511		CHIP CERAMIC CAP. CG J 22PF/50V	CHD1JJ3CG220
C513		CHIP CERAMIC CAP.(MELF) SL D 10PF/50V	CZM1JDBSL100
C513		CHIP CERAMIC CAP.(MELF) SL D 10PF/50V	CZM1JD3SL100
C513		CHIP CERAMIC CAP. CH D 10PF/50V	CHD1JDBCH100
C513		CHIP CERAMIC CAP. CH D 10PF/50V	CHD1JD3CH100
C513		CHIP CERAMIC CAP. CG D 10PF/50V	CHD1JD3CG100
C514		CHIP CERAMIC CAP.(MELF) SL J 22PF/50V	CZM1JJBSL220
C514		CHIP CERAMIC CAP.(MELF) SL J 22PF/50V	CZM1JJ3SL220
C515		CHIP CERAMIC CAP.(MELF) SL J 18PF/50V	CZM1JJBSL180
C515		CHIP CERAMIC CAP.(MELF) SL J 18PF/50V	CZM1JJ3SL180
C515		CHIP CERAMIC CAP. CH J 18PF/50V	CHD1JJBCH180
C515		CHIP CERAMIC CAP. CH J 18PF/50V	CHD1JJ3CH180
C515		CHIP CERAMIC CAP. CG J 18PF/50V	CHD1JJ3CG180
C521		ELECTROLYTIC CAP. 47UF/16V M H7	CE1CMAVSL470
C522		CHIP CERAMIC CAP. B K 4700PF/50V	CHD1JKB0B472
C522		CHIP CERAMIC CAP. B K 4700PF/50V	CHD1JK30B472
C523		CHIP CERAMIC CAP.(MELF) SL J 100PF/50V	CZM1JJBSL101
C523		CHIP CERAMIC CAP.(MELF) SL J 100PF/50V	CZM1JJ3SL101
C523		CHIP CERAMIC CAP. CH J 100PF/50V	CHD1JJBCH101
C523		CHIP CERAMIC CAP. CH J 100PF/50V	CHD1JJ3CH101
C523		CHIP CERAMIC CAP. CG J 100PF/50V	CHD1JJ3CG101
C527		CHIP CERAMIC CAP. B K 0.047UF/50V	CHD1JKB0B473
C527		CHIP CERAMIC CAP. B K 0.047UF/25V	CHD1EKB0B473
C527		CHIP CERAMIC CAP. B K 0.047UF/50V	CHD1JK30B473
C527		CHIP CERAMIC CAP. B K 0.047UF/25V	CHD1EK30B473
C529		CHIP CERAMIC CAP. B K 0.022UF/50V	CHD1JKB0B223
C529		CHIP CERAMIC CAP. B K 0.022UF/25V	CHD1EKB0B223
C529		CHIP CERAMIC CAP. B K 0.022UF/50V	CHD1JK30B223
C529		CHIP CERAMIC CAP. B K 0.022UF/25V	CHD1EK30B223
C530		ELECTROLYTIC CAP. 1UF/50V M H7	CE1JMAVSL1R0
C531		ELECTROLYTIC CAP. 10UF/16V M H7	CE1CMAVSL100
C532		ELECTROLYTIC CAP. 10UF/16V M H7	CE1CMAVSL100
C533	B	ELECTROLYTIC CAP. 47UF/6.3V M H7	CE0KMAVSL470
C534		CHIP CERAMIC CAP. B K 0.1UF/25V	CHD1EKB0B104
C534		CHIP CERAMIC CAP. B K 0.1UF/16V	CHD1CKB0B104
C534		CHIP CERAMIC CAP. B K 0.1UF/25V	CHD1EK30B104

C534		CHIP CERAMIC CAP. B K 0.1UF/16V	CHD1CK30B104
C535		ELECTROLYTIC CAP. 22UF/10V M H7	CE1AMAVSL220
C536		CHIP CERAMIC CAP. B K 1000PF/50V	CHD1JKB0B102
C536		CHIP CERAMIC CAP. B K 1000PF/50V	CHD1JK30B102
C537		CHIP CERAMIC CAP. B K 1000PF/50V	CHD1JKB0B102
C537		CHIP CERAMIC CAP. B K 1000PF/50V	CHD1JK30B102
C539		CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V	CZM1CZB0F103
C539		CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V	CZM1CZ30F103
C540		CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V	CZM1CZB0F103
C540		CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V	CZM1CZ30F103
C541		ELECTROLYTIC CAP. 47UF/6.3V M H7	CE0KMAVSL470
C544		ELECTROLYTIC CAP. 100UF/6.3V H7	CE0KMAVSL101
C545		CERAMIC CAP.(AX) X K 4700PF/16V	CCA1CKT0X472
C546		CERAMIC CAP.(AX) B K 150PF/50V	CCA1JKT0B151
C547		CERAMIC CAP.(AX) B K 120PF/50V	CCA1JKT0B121
C571	B	CHIP CERAMIC CAP. B K 1000PF/50V	CHD1JKB0B102
C571	B	CHIP CERAMIC CAP. B K 1000PF/50V	CHD1JK30B102
C701	A	PCB JUMPER D0.6-P5.0	JW5.0T
C701	B	ELECTROLYTIC CAP. 0.47UF/50V M	CE1JMASDLR47
C701	B	ELECTROLYTIC CAP. 0.47UF/50V M	CE1JMASTLR47
C703		ELECTROLYTIC CAP. 100UF/6.3V H7	CE0KMAVSL101
C704		CHIP CERAMIC CAP. F Z 0.1UF/50V	CHD1JZB0F104
C704		CHIP CERAMIC CAP. F Z 0.1UF/25V	CHD1EZB0F104
C704		CHIP CERAMIC CAP. F Z 0.1UF/50V	CHD1JZ30F104
C704		CHIP CERAMIC CAP. F Z 0.1UF/25V	CHD1EZ30F104
C704		CHIP CERAMIC CAP. FZ Z 0.1UF/50V	CHD1JZ3FZ104
C707	A	FILM CAP.(P) 0.039UF/50V J	CMA1JJS00393
C707	A	FILM CAP.(P) 0.039UF/50V J	CA1J393MS029
C708		ELECTROLYTIC CAP. 0.22UF/50V M	CE1JMASDLR22
C708		ELECTROLYTIC CAP. 0.22UF/50V M	CE1JMASTLR22
C709		ELECTROLYTIC CAP. 1UF/50V M	CE1JMASDL1R0
C709		ELECTROLYTIC CAP. 1UF/50V M	CE1JMASTL1R0
C751		CHIP CERAMIC CAP. CH J 68PF/50V	CHD1JJBCH680
C751		CHIP CERAMIC CAP. CH J 68PF/50V	CHD1JJ3CH680
C751		CHIP CERAMIC CAP. CG J 68PF/50V	CHD1JJ3CG680
C425A		FILM CAP.(P) 0.018UF/100V J	CMA2AJS00183
C425A		FILM CAP.(P) 0.018UF/50V J	CA1J183MS029
D001		RECTIFIER DIODE 1N4005 A124	NDAZ001N4005
D002		RECTIFIER DIODE 1N4005 A124	NDAZ001N4005
D003		RECTIFIER DIODE 1N4005 A124	NDAZ001N4005
D004		RECTIFIER DIODE 1N4005 A124	NDAZ001N4005
D006		SWITCHING DIODE 1N4148M	NDTZ01N4148M
D006		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D013		RECTIFIER DIODE BA157	NDQZ000BA157
D013		FAST RECOVERY DIODE ERA18-04	QDPZ0ERA1804
D015		RECTIFIER DIODE BA157	NDQZ000BA157
D015		FAST RECOVERY DIODE ERA18-04	QDPZ0ERA1804
D016		SCHOTTKY BARRIER DIODE SB140	NDQZ000SB140
D016		SCHOTTKY BARRIER DIODE ERB81-004	AERB81004***
D018		ZENER DIODE DZ-8.2BSAT265	NDTA0DZ8R2BS
D018		ZENER DIODE MTZJT-778.2A	QDTA0MTZJ8R2
D020		RECTIFIER DIODE BA157	NDQZ000BA157
D020		FAST RECOVERY DIODE ERA18-04	QDPZ0ERA1804
D051		RECTIFIER DIODE BA158	NDQZ000BA158
D051		RECTIFIER DIODE ERA22-10	QDPZ0ERA2210
D052	A	CARBON RES. 1/6W J 5.6K OHM	RCX6JATZ0562
D052	A	CARBON RES. 1/4W J 5.6K OHM	RCX4JATZ0562

D052	B	ZENER DIODE DZ-10BSBT265	NDTB00DZ10BS
D052	B	ZENER DIODE MTZJT-7710B	QDTB00MTZJ10
D053		PCB JUMPER D0.6-P10.0	JW10.0T
D501		SWITCHING DIODE 1N4148M	NDTZ01N4148M
D501		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D555		LED MIE-534A2	NPZZM1E534A2
D555		LED SIR-563ST3F P	QPQPS1R563ST
D555		LED SIR-563ST3F Q	QPQQS1R563ST
D561		LED(RED) 204HD/E	NPQZ00204HDE
D562		LED(GREEN) 204-10GD/S957	NPQZ10GDS957
D563		LED(GREEN) 204-10GD/S957	NPQZ10GDS957
D564		LED(RED) 204HD/E	NPQZ00204HDE
D565		LED(RED) 204HD/E	NPQZ00204HDE
D701A		ZENER DIODE DZ-33BSDT265	NDTD00DZ33BS
D701A		ZENER DIODE MTZJT-7733D	QDTD00MTZJ33
F001!		FUSE SIC 1A 250V UC/T	PAGG20CW3102
F001!		FUSE 1A/250V	PAGG20CAG102
FH001		FUSE HOLDER MSF-015	XH01Z00LY001
FH002		FUSE HOLDER MSF-015	XH01Z00LY001
IC001!		PHOTOCOUPLER EL817A	NPEA000EL817
IC001!		PHOTOCOUPLER EL817B	NPEB000EL817
IC001!		PHOTOCOUPLER LTV-817B-F	NPEB0LTV817F
IC001!		PHOTOCOUPLER LTV-817C-F	NPEC0LTV817F
IC002		IC KIA431-AT	NSZLA0TJY001
IC002		IC:SHUNT REGULATOR TL431A-TA	NSZBA0TQ2003
IC002		IC KIA431A-AT	NSZBA0TJY018
IC301		IC:Y/C/A LA71091M	QSZBA0RSY012
IC451	B	IC:HIFI LA72670M	QSZBA0RSY034
IC501		MICROCONTROLLER 8BIT MN101D08EFA4	QSZAC0RMS005
J162		INDUCTOR 47UH-K-5FT	LLARKBSTU470
JK751	A	RCA JACK MSP-282V-14	JXRL030LY001
JK751	B	RCA JACK MSP-283V-B-324	JXRL040LY006
JK752	A	RCA JACK MSP-282V-14	JXRL030LY001
JK752	B	RCA JACK MSP-293V3-324	JYRL060LY003
JK753		RCA JACK(YELLOW) MSP-281V4-B	JXRL010LY003
JK754	B	RCA JACK(WHITE) MSP-281V1-B	JXRL010LY005
JK755	A	RCA JACK(WHITE) MSP-281V1-B	JXRL010LY005
JK755	B	RCA JACK(RED) MSP-281V3-A	JYRL010LY002
JW001	B	WIRE 030/BRO/AWG26#1007	WX3101A63F03
L001!		LINE FILTER 4.5MH SA-00411B	LLBG00ZSA001
L001!		LINE FILTER 4.0MH LF130908-0009	LLBG00ZKV002
L009		CHOKE COIL 47UH-K	LLBD00PKV007
L251		PCB JUMPER D0.6-P5.0	JW5.0T
L303		INDUCTOR 100UH-K-26T	LLAXKATTU101
L304		CHOKE COIL 47UH-K	LLBD00PKV007
L421		INDUCTOR 47UH-K-5FT	LLARKBSTU470
L422		PCB JUMPER D0.6-P5.0	JW5.0T
L451		PCB JUMPER D0.6-P5.0	JW5.0T
L452	B	PCB JUMPER D0.6-P5.0	JW5.0T
L501		PCB JUMPER D0.6-P5.0	JW5.0T
L502		CHOKE COIL 47UH-K	LLBD00PKV007
L503		INDUCTOR 12UH-K-26T	LLAXKATTU120
L504		INDUCTOR 47UH-K-26T	LLAXKATTU470
L701		INDUCTOR 4.7UH-K-5FT	LLARKBSTU4R7
Q001		FET 2SK3472	QFWZ02SK3472
Q001		FET 2SK3374	QFWZ02SK3374
Q002		TRANSISTOR KTC3199(BL)	NQS50KTC3199

Q002		TRANSISTOR 2SC2785(K)	QQSK02SC2785
Q002		TRANSISTOR 2SC1815-BL(TPE2)	QQS202SC1815
Q052		RES. BUILT-IN TRANSISTOR KRC103M	NQSZ0KRC103M
Q052		RES. BUILT-IN TRANSISTOR BA1F4M-T	QQSZ00BA1F4M
Q055		TRANSISTOR KTC3203(Y)	NQSY0KTC3203
Q055		TRANSISTOR 2SC2120-Y(TPE2)	QQSY02SC2120
Q056		TRANSISTOR KTC3203(Y)	NQSY0KTC3203
Q056		TRANSISTOR 2SC2120-Y(TPE2)	QQSY02SC2120
Q057		TRANSISTOR KTC3199(BL)	NQS50KTC3199
Q057		TRANSISTOR 2SC2785(K)	QQSK02SC2785
Q057		TRANSISTOR 2SC1815-BL(TPE2)	QQS202SC1815
Q301		TRANSISTOR KTA1266(GR)	NQS40KTA1266
Q301		TRANSISTOR 2SA1015-GR(TPE2)	QQS102SA1015
Q302		TRANSISTOR KTC3193(Y)	NQSY0KTC3193
Q303		TRANSISTOR KTC3193(Y)	NQSY0KTC3193
Q391		TRANSISTOR KTA1266(GR)	NQS40KTA1266
Q391		TRANSISTOR 2SA1015-GR(TPE2)	QQS102SA1015
Q421		TRANSISTOR KTA1266(GR)	NQS40KTA1266
Q421		TRANSISTOR 2SA1015-GR(TPE2)	QQS102SA1015
Q422		TRANSISTOR KTC3203(Y)	NQSY0KTC3203
Q422		TRANSISTOR 2SC2120-Y(TPE2)	QQSY02SC2120
Q425		RES. BUILT-IN TRANSISTOR KRA103M	NQSZ0KRA103M
Q425		RES. BUILT-IN TRANSISTOR BN1F4M-T	QQSZ00BN1F4M
Q426		CHIP TRANSISTOR RN1511(TE85R)	QQ2Z00RN1511
Q426		CHIP TRANSISTOR FMG4A T148	QQ2Z000FMG4A
Q501		TRANSISTOR KTC3199(BL)	NQS50KTC3199
Q501		TRANSISTOR 2SC2785(K)	QQSK02SC2785
Q501		TRANSISTOR 2SC1815-BL(TPE2)	QQS202SC1815
Q506		PHOTO TRANSISTOR PT204-6B-12	NPWZT2046B12
Q506		PHOTO TRANSISTOR MID-32A22	NPWZM1D32A22
Q562		TRANSISTOR KTC3199(Y)	NQSY0KTC3199
Q562		TRANSISTOR KTC3199(GR)	NQS10KTC3199
Q562		TRANSISTOR 2SC2785(J)	QQSJ02SC2785
Q562		TRANSISTOR 2SC2785(H)	QQSH02SC2785
Q562		TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q562		TRANSISTOR 2SC1815-Y(TPE2)	QQSY02SC1815
Q562		TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q563		TRANSISTOR KTC3199(Y)	NQSY0KTC3199
Q563		TRANSISTOR KTC3199(GR)	NQS10KTC3199
Q563		TRANSISTOR 2SC2785(J)	QQSJ02SC2785
Q563		TRANSISTOR 2SC2785(H)	QQSH02SC2785
Q563		TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q563		TRANSISTOR 2SC1815-Y(TPE2)	QQSY02SC1815
Q563		TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
R001		GLASS GLAZE RES. 1/2W J 3.3M OHM	RXX2JZLZ0335
R001		CARBON RES. 1/2W J 3.3M OHM	RCX2335DP001
R002		METAL OXIDE FILM RES. 1/2W J 1.8 OHM	RNX2JZLZ01R8
R002		METAL OXIDE FILM RES. 1/2W J 1.8 OHM	RNX2JZQZ01R8
R004		CARBON RES. 1/4W J 2.7M OHM	RCX4JATZ0275
R005		CARBON RES. 1/4W J 2.7M OHM	RCX4JATZ0275
R008		CARBON RES. 1/6W J 560 OHM	RCX6JATZ0561
R008		CARBON RES. 1/4W J 560 OHM	RCX4JATZ0561
R012		CARBON RES. 1/6W J 22K OHM	RCX6JATZ0223
R012		CARBON RES. 1/4W J 22K OHM	RCX4JATZ0223
R014		CARBON RES. 1/2W J 1.1 OHM	RCX21R1ZU004
R016		CARBON RES. 1/6W J 1K OHM	RCX6JATZ0102
R016		CARBON RES. 1/4W J 1K OHM	RCX4JATZ0102

R017		CARBON RES. 1/4W J 33K OHM	RCX4JATZ0333
R018		CARBON RES. 1/4W J 33K OHM	RCX4JATZ0333
R019		CARBON RES. 1/6W J 470K OHM	RCX6JATZ0474
R019		CARBON RES. 1/4W J 470K OHM	RCX4JATZ0474
R022		CARBON RES. 1/6W J 47K OHM	RCX6JATZ0473
R022		CARBON RES. 1/4W J 47K OHM	RCX4JATZ0473
R030		CHIP RES.(1608) 1/10W J 390 OHM	RRXAJB5Z0391
R030		CHIP RES.(1608) 1/10W J 390 OHM	RRXAJR5Z0391
R031		CHIP RES.(1608) 1/10W J 1K OHM	RRXAJB5Z0102
R031		CHIP RES.(1608) 1/10W J 1K OHM	RRXAJR5Z0102
R032		CHIP RES.(1608) 1/10W J 10K OHM	RRXAJB5Z0103
R032		CHIP RES.(1608) 1/10W J 10K OHM	RRXAJR5Z0103
R033		CHIP RES.(1608) 1/10W F 2.2K OHM	RRXAFB5H2201
R033		CHIP RES.(1608) 1/10W F 2.2K OHM	RRXAFB5Z2201
R033		CHIP RES.(1608) 1/10W F 2.2K OHM	RRXAFR5H2201
R033		CHIP RES.(1608) 1/10W F 2.2K OHM	RRXAFR5Z2201
R034		CHIP RES.(1608) 1/10W F 2K OHM	RRXAFB5H2001
R034		CHIP RES.(1608) 1/10W F 2K OHM	RRXAFB5Z2001
R034		CHIP RES.(1608) 1/10W F 2K OHM	RRXAFR5H2001
R034		CHIP RES.(1608) 1/10W F 2K OHM	RRXAFR5Z2001
R035		CHIP RES.(1608) 1/10W J 27K OHM	RRXAJB5Z0273
R035		CHIP RES.(1608) 1/10W J 27K OHM	RRXAJR5Z0273
R040		CARBON RES. 1/4W J 1.8K OHM	RCX4JATZ0182
R041		CARBON RES. 1/4W J 1.8K OHM	RCX4JATZ0182
R042		CARBON RES. 1/4W J 270 OHM	RCX4JATZ0271
R043		CARBON RES. 1/4W J 270 OHM	RCX4JATZ0271
R056		CHIP RES.(1608) 1/10W J 1K OHM	RRXAJB5Z0102
R056		CHIP RES.(1608) 1/10W J 1K OHM	RRXAJR5Z0102
R057	A	CARBON RES. 1/4W J 470 OHM	RCX4JATZ0471
R057	B	CARBON RES. 1/4W J 150 OHM	RCX4JATZ0151
R060		CARBON RES. 1/4W J 470 OHM	RCX4JATZ0471
R061		CHIP RES.(1608) 1/10W J 1.2K OHM	RRXAJB5Z0122
R061		CHIP RES.(1608) 1/10W J 1.2K OHM	RRXAJR5Z0122
R062		CHIP RES.(1608) 1/10W J 5.6K OHM	RRXAJB5Z0562
R062		CHIP RES.(1608) 1/10W J 5.6K OHM	RRXAJR5Z0562
R073		CARBON RES. 1/4W J 10K OHM	RCX4JATZ0103
R075		CHIP RES.(1608) 1/10W J 4.7K OHM	RRXAJB5Z0472
R075		CHIP RES.(1608) 1/10W J 4.7K OHM	RRXAJR5Z0472
R087		CARBON RES. 1/6W J 8.2K OHM	RCX6JATZ0822
R087		CARBON RES. 1/4W J 8.2K OHM	RCX4JATZ0822
R088		CARBON RES. 1/4W J 10K OHM	RCX4JATZ0103
R253	B	CHIP RES.(1608) 1/10W J 47K OHM	RRXAJB5Z0473
R253	B	CHIP RES.(1608) 1/10W J 47K OHM	RRXAJR5Z0473
R254	A	CHIP RES.(1608) 1/10W J 1.8K OHM	RRXAJB5Z0182
R254	A	CHIP RES.(1608) 1/10W J 1.8K OHM	RRXAJR5Z0182
R254	B	CHIP RES.(1608) 1/10W J 2.2K OHM	RRXAJB5Z0222
R254	B	CHIP RES.(1608) 1/10W J 2.2K OHM	RRXAJR5Z0222
R303		CHIP RES.(1608) 1/10W J 47K OHM	RRXAJB5Z0473
R303		CHIP RES.(1608) 1/10W J 47K OHM	RRXAJR5Z0473
R304		CHIP RES.(1608) 1/10W J 47K OHM	RRXAJB5Z0473
R304		CHIP RES.(1608) 1/10W J 47K OHM	RRXAJR5Z0473
R305	B	CHIP RES.(1608) 1/10W J 47K OHM	RRXAJB5Z0473
R305	B	CHIP RES.(1608) 1/10W J 47K OHM	RRXAJR5Z0473
R306		CHIP RES.(1608) 1/10W J 18K OHM	RRXAJB5Z0183
R306		CHIP RES.(1608) 1/10W J 18K OHM	RRXAJR5Z0183
R309		CHIP RES.(1608) 1/10W J 15K OHM	RRXAJB5Z0153
R309		CHIP RES.(1608) 1/10W J 15K OHM	RRXAJR5Z0153

R311		CHIP RES.(1608) 1/10W J 4.7K OHM	RRXAJB5Z0472
R311		CHIP RES.(1608) 1/10W J 4.7K OHM	RRXAJR5Z0472
R312		CHIP RES.(1608) 1/10W J 1.2K OHM	RRXAJB5Z0122
R312		CHIP RES.(1608) 1/10W J 1.2K OHM	RRXAJR5Z0122
R313		CHIP RES.(1608) 1/10W J 100K OHM	RRXAJB5Z0104
R313		CHIP RES.(1608) 1/10W J 100K OHM	RRXAJR5Z0104
R322		CHIP RES.(1608) 1/10W J 5.6M OHM	RRXAJB5Z0565
R322		CHIP RES.(1608) 1/10W J 5.6M OHM	RRXAJR5Z0565
R323		CHIP RES.(1608) 1/10W J 100K OHM	RRXAJB5Z0104
R323		CHIP RES.(1608) 1/10W J 100K OHM	RRXAJR5Z0104
R324		CHIP RES.(1608) 1/10W J 82K OHM	RRXAJB5Z0823
R324		CHIP RES.(1608) 1/10W J 82K OHM	RRXAJR5Z0823
R326		CHIP RES.(1608) 1/10W J 2.2K OHM	RRXAJB5Z0222
R326		CHIP RES.(1608) 1/10W J 2.2K OHM	RRXAJR5Z0222
R327		CHIP RES.(1608) 1/10W J 4.7K OHM	RRXAJB5Z0472
R327		CHIP RES.(1608) 1/10W J 4.7K OHM	RRXAJR5Z0472
R328		CHIP RES.(1608) 1/10W J 680K OHM	RRXAJB5Z0684
R328		CHIP RES.(1608) 1/10W J 680K OHM	RRXAJR5Z0684
R329		CHIP RES.(1608) 1/10W J 1.8K OHM	RRXAJB5Z0182
R329		CHIP RES.(1608) 1/10W J 1.8K OHM	RRXAJR5Z0182
R330		CHIP RES.(1608) 1/10W J 1.8K OHM	RRXAJB5Z0182
R330		CHIP RES.(1608) 1/10W J 1.8K OHM	RRXAJR5Z0182
R331		CHIP RES.(1608) 1/10W J 2.2K OHM	RRXAJB5Z0222
R331		CHIP RES.(1608) 1/10W J 2.2K OHM	RRXAJR5Z0222
R332		CHIP RES.(1608) 1/10W J 8.2K OHM	RRXAJB5Z0822
R332		CHIP RES.(1608) 1/10W J 8.2K OHM	RRXAJR5Z0822
R341		CHIP RES.(1608) 1/10W J 4.7K OHM	RRXAJB5Z0472
R341		CHIP RES.(1608) 1/10W J 4.7K OHM	RRXAJR5Z0472
R342		CHIP RES.(1608) 1/10W J 4.7K OHM	RRXAJB5Z0472
R342		CHIP RES.(1608) 1/10W J 4.7K OHM	RRXAJR5Z0472
R343		CHIP RES.(1608) 1/10W J 1.8K OHM	RRXAJB5Z0182
R343		CHIP RES.(1608) 1/10W J 1.8K OHM	RRXAJR5Z0182
R357		PCB JUMPER D0.6-P11.5	JW11.5T
R391		CARBON RES. 1/6W J 560 OHM	RCX6JATZ0561
R391		CARBON RES. 1/4W J 560 OHM	RCX4JATZ0561
R392		CARBON RES. 1/6W J 560 OHM	RCX6JATZ0561
R392		CARBON RES. 1/4W J 560 OHM	RCX4JATZ0561
R395	A	CARBON RES. 1/6W J 100 OHM	RCX6JATZ0101
R395	A	CARBON RES. 1/4W J 100 OHM	RCX4JATZ0101
R395	B	CARBON RES. 1/6W J 10 OHM	RCX6JATZ0100
R395	B	CARBON RES. 1/4W J 10 OHM	RCX4JATZ0100
R396		CARBON RES. 1/6W J 220 OHM	RCX6JATZ0221
R396		CARBON RES. 1/4W J 220 OHM	RCX4JATZ0221
R401	A	CHIP RES.(1608) 1/10W J 27K OHM	RRXAJB5Z0273
R401	A	CHIP RES.(1608) 1/10W J 27K OHM	RRXAJR5Z0273
R401	B	CHIP RES.(1608) 1/10W J 6.8K OHM	RRXAJB5Z0682
R401	B	CHIP RES.(1608) 1/10W J 6.8K OHM	RRXAJR5Z0682
R402	A	CHIP RES.(1608) 1/10W J 4.7K OHM	RRXAJB5Z0472
R402	A	CHIP RES.(1608) 1/10W J 4.7K OHM	RRXAJR5Z0472
R402	B	CHIP RES.(1608) 1/10W J 8.2K OHM	RRXAJB5Z0822
R402	B	CHIP RES.(1608) 1/10W J 8.2K OHM	RRXAJR5Z0822
R403	A	CHIP RES.(1608) 1/10W J 27K OHM	RRXAJB5Z0273
R403	A	CHIP RES.(1608) 1/10W J 27K OHM	RRXAJR5Z0273
R404	A	CHIP RES.(1608) 1/10W J 4.7K OHM	RRXAJB5Z0472
R404	A	CHIP RES.(1608) 1/10W J 4.7K OHM	RRXAJR5Z0472
R405	A	CHIP RES.(1608) 1/10W J 27K OHM	RRXAJB5Z0273
R405	A	CHIP RES.(1608) 1/10W J 27K OHM	RRXAJR5Z0273

R406	A	CHIP RES.(1608) 1/10W J 4.7K OHM	RRXAJB5Z0472
R406	A	CHIP RES.(1608) 1/10W J 4.7K OHM	RRXAJR5Z0472
R407		CHIP RES.(1608) 1/10W J 2.2M OHM	RRXAJB5Z0225
R407		CHIP RES.(1608) 1/10W J 2.2M OHM	RRXAJR5Z0225
R408		CHIP RES.(1608) 1/10W J 6.8K OHM	RRXAJB5Z0682
R408		CHIP RES.(1608) 1/10W J 6.8K OHM	RRXAJR5Z0682
R409		CHIP RES.(1608) 1/10W J 3.3K OHM	RRXAJB5Z0332
R409		CHIP RES.(1608) 1/10W J 3.3K OHM	RRXAJR5Z0332
R410		CHIP RES.(1608) 1/10W J 6.8K OHM	RRXAJB5Z0682
R410		CHIP RES.(1608) 1/10W J 6.8K OHM	RRXAJR5Z0682
R411		CHIP RES.(1608) 1/10W J 1.8K OHM	RRXAJB5Z0182
R411		CHIP RES.(1608) 1/10W J 1.8K OHM	RRXAJR5Z0182
R412		CHIP RES.(1608) 1/10W J 2.2K OHM	RRXAJB5Z0222
R412		CHIP RES.(1608) 1/10W J 2.2K OHM	RRXAJR5Z0222
R413		CHIP RES.(1608) 1/10W J 10K OHM	RRXAJB5Z0103
R413		CHIP RES.(1608) 1/10W J 10K OHM	RRXAJR5Z0103
R414		CHIP RES.(1608) 1/10W J 8.2K OHM	RRXAJB5Z0822
R414		CHIP RES.(1608) 1/10W J 8.2K OHM	RRXAJR5Z0822
R415		CHIP RES.(1608) 1/10W J 12K OHM	RRXAJB5Z0123
R415		CHIP RES.(1608) 1/10W J 12K OHM	RRXAJR5Z0123
R416		CHIP RES.(1608) 1/10W J 330K OHM	RRXAJB5Z0334
R416		CHIP RES.(1608) 1/10W J 330K OHM	RRXAJR5Z0334
R417		CHIP RES.(1608) 1/10W J 150 OHM	RRXAJB5Z0151
R417		CHIP RES.(1608) 1/10W J 150 OHM	RRXAJR5Z0151
R418		CHIP RES.(1608) 1/10W J 18K OHM	RRXAJB5Z0183
R418		CHIP RES.(1608) 1/10W J 18K OHM	RRXAJR5Z0183
R419		CHIP RES.(1608) 1/10W J 910 OHM	RRXAJB5Z0911
R419		CHIP RES.(1608) 1/10W J 910 OHM	RRXAJR5Z0911
R421		CHIP RES.(1608) 1/10W J 1K OHM	RRXAJB5Z0102
R421		CHIP RES.(1608) 1/10W J 1K OHM	RRXAJR5Z0102
R422		CHIP RES.(1608) 1/10W J 22K OHM	RRXAJB5Z0223
R422		CHIP RES.(1608) 1/10W J 22K OHM	RRXAJR5Z0223
R424		CARBON RES. 1/6W J 47K OHM	RCX6JATZ0473
R424		CARBON RES. 1/4W J 47K OHM	RCX4JATZ0473
R425		CARBON RES. 1/6W J 100 OHM	RCX6JATZ0101
R425		CARBON RES. 1/4W J 100 OHM	RCX4JATZ0101
R426		CARBON RES. 1/6W J 820 OHM	RCX6JATZ0821
R426		CARBON RES. 1/4W J 820 OHM	RCX4JATZ0821
R430	B	CHIP RES.(1608) 1/10W 0 OHM	RRXAZB5Z0000
R430	B	CHIP RES.(1608) 1/10W 0 OHM	RRXAZR5Z0000
R431	B	CHIP RES.(1608) 1/10W 0 OHM	RRXAZB5Z0000
R431	B	CHIP RES.(1608) 1/10W 0 OHM	RRXAZR5Z0000
R451	B	CHIP RES.(1608) 1/10W J 12K OHM	RRXAJB5Z0123
R451	B	CHIP RES.(1608) 1/10W J 12K OHM	RRXAJR5Z0123
R452	B	CHIP RES.(1608) 1/10W J 4.7K OHM	RRXAJB5Z0472
R452	B	CHIP RES.(1608) 1/10W J 4.7K OHM	RRXAJR5Z0472
R453	B	CHIP RES.(1608) 1/10W J 47K OHM	RRXAJB5Z0473
R453	B	CHIP RES.(1608) 1/10W J 47K OHM	RRXAJR5Z0473
R454	B	CHIP RES.(1608) 1/10W J 8.2K OHM	RRXAJB5Z0822
R454	B	CHIP RES.(1608) 1/10W J 8.2K OHM	RRXAJR5Z0822
R455	B	CHIP RES.(1608) 1/10W J 47K OHM	RRXAJB5Z0473
R455	B	CHIP RES.(1608) 1/10W J 47K OHM	RRXAJR5Z0473
R456	B	CHIP RES.(1608) 1/10W J 8.2K OHM	RRXAJB5Z0822
R456	B	CHIP RES.(1608) 1/10W J 8.2K OHM	RRXAJR5Z0822
R457	B	CHIP RES.(1608) 1/10W J 470 OHM	RRXAJB5Z0471
R457	B	CHIP RES.(1608) 1/10W J 470 OHM	RRXAJR5Z0471
R458	B	CHIP RES.(1608) 1/10W J 2.7K OHM	RRXAJB5Z0272

R458	B	CHIP RES.(1608) 1/10W J 2.7K OHM	RRXAJR5Z0272
R459	B	CHIP RES.(1608) 1/10W J 22K OHM	RRXAJB5Z0223
R459	B	CHIP RES.(1608) 1/10W J 22K OHM	RRXAJR5Z0223
R462	B	CHIP RES.(1608) 1/10W J 4.7K OHM	RRXAJB5Z0472
R462	B	CHIP RES.(1608) 1/10W J 4.7K OHM	RRXAJR5Z0472
R463	B	CHIP RES.(1608) 1/10W J 47K OHM	RRXAJB5Z0473
R463	B	CHIP RES.(1608) 1/10W J 47K OHM	RRXAJR5Z0473
R464	B	CHIP RES.(1608) 1/10W J 8.2K OHM	RRXAJB5Z0822
R464	B	CHIP RES.(1608) 1/10W J 8.2K OHM	RRXAJR5Z0822
R465	B	CHIP RES.(1608) 1/10W J 47K OHM	RRXAJB5Z0473
R465	B	CHIP RES.(1608) 1/10W J 47K OHM	RRXAJR5Z0473
R466	B	CHIP RES.(1608) 1/10W J 8.2K OHM	RRXAJB5Z0822
R466	B	CHIP RES.(1608) 1/10W J 8.2K OHM	RRXAJR5Z0822
R467	B	CHIP RES.(1608) 1/10W J 10K OHM	RRXAJB5Z0103
R467	B	CHIP RES.(1608) 1/10W J 10K OHM	RRXAJR5Z0103
R468	B	CHIP RES.(1608) 1/10W J 1K OHM	RRXAJB5Z0102
R468	B	CHIP RES.(1608) 1/10W J 1K OHM	RRXAJR5Z0102
R469	B	CHIP RES.(1608) 1/10W J 1K OHM	RRXAJB5Z0102
R469	B	CHIP RES.(1608) 1/10W J 1K OHM	RRXAJR5Z0102
R470	B	CHIP RES.(1608) 1/10W J 1K OHM	RRXAJB5Z0102
R470	B	CHIP RES.(1608) 1/10W J 1K OHM	RRXAJR5Z0102
R471	B	CHIP RES.(1608) 1/10W J 1K OHM	RRXAJB5Z0102
R471	B	CHIP RES.(1608) 1/10W J 1K OHM	RRXAJR5Z0102
R472	B	CHIP RES.(1608) 1/10W J 39K OHM	RRXAJB5Z0393
R472	B	CHIP RES.(1608) 1/10W J 39K OHM	RRXAJR5Z0393
R502		CHIP RES.(1608) 1/10W J 2.2K OHM	RRXAJB5Z0222
R502		CHIP RES.(1608) 1/10W J 2.2K OHM	RRXAJR5Z0222
R503		CHIP RES.(1608) 1/10W J 820 OHM	RRXAJB5Z0821
R503		CHIP RES.(1608) 1/10W J 820 OHM	RRXAJR5Z0821
R504		CHIP RES.(1608) 1/10W J 100K OHM	RRXAJB5Z0104
R504		CHIP RES.(1608) 1/10W J 100K OHM	RRXAJR5Z0104
R506		CHIP RES.(1608) 1/10W J 100K OHM	RRXAJB5Z0104
R506		CHIP RES.(1608) 1/10W J 100K OHM	RRXAJR5Z0104
R508		CHIP RES.(1608) 1/10W 0 OHM	RRXAZB5Z0000
R508		CHIP RES.(1608) 1/10W 0 OHM	RRXAZR5Z0000
R511		CHIP RES.(1608) 1/10W J 39K OHM	RRXAJB5Z0393
R511		CHIP RES.(1608) 1/10W J 39K OHM	RRXAJR5Z0393
R517		CHIP RES.(1608) 1/10W J 10K OHM	RRXAJB5Z0103
R517		CHIP RES.(1608) 1/10W J 10K OHM	RRXAJR5Z0103
R518		CHIP RES.(1608) 1/10W J 220K OHM	RRXAJB5Z0224
R518		CHIP RES.(1608) 1/10W J 220K OHM	RRXAJR5Z0224
R521		CHIP RES.(1608) 1/10W J 1K OHM	RRXAJB5Z0102
R521		CHIP RES.(1608) 1/10W J 1K OHM	RRXAJR5Z0102
R523		CHIP RES.(1608) 1/10W J 2.2K OHM	RRXAJB5Z0222
R523		CHIP RES.(1608) 1/10W J 2.2K OHM	RRXAJR5Z0222
R524		CHIP RES.(1608) 1/10W J 10K OHM	RRXAJB5Z0103
R524		CHIP RES.(1608) 1/10W J 10K OHM	RRXAJR5Z0103
R525		CHIP RES.(1608) 1/10W J 10K OHM	RRXAJB5Z0103
R525		CHIP RES.(1608) 1/10W J 10K OHM	RRXAJR5Z0103
R526		CHIP RES.(1608) 1/10W J 1K OHM	RRXAJB5Z0102
R526		CHIP RES.(1608) 1/10W J 1K OHM	RRXAJR5Z0102
R527		CHIP RES.(1608) 1/10W J 1K OHM	RRXAJB5Z0102
R527		CHIP RES.(1608) 1/10W J 1K OHM	RRXAJR5Z0102
R528		CHIP RES.(1608) 1/10W J 10K OHM	RRXAJB5Z0103
R528		CHIP RES.(1608) 1/10W J 10K OHM	RRXAJR5Z0103
R529		CHIP RES.(1608) 1/10W J 1K OHM	RRXAJB5Z0102
R529		CHIP RES.(1608) 1/10W J 1K OHM	RRXAJR5Z0102

R530		CHIP RES.(1608) 1/10W J 1K OHM	RRXAJB5Z0102
R530		CHIP RES.(1608) 1/10W J 1K OHM	RRXAJR5Z0102
R531		CARBON RES. 1/6W G 4.7K OHM	RCX6GATZ0472
R531		CARBON RES. 1/4W G 4.7K OHM	RCX4GATZ0472
R532		CARBON RES. 1/6W G 1.5K OHM	RCX6GATZ0152
R532		CARBON RES. 1/4W G 1.5K OHM	RCX4GATZ0152
R535		CHIP RES.(1608) 1/10W F 10K OHM	RRXAFB5H1002
R535		CHIP RES.(1608) 1/10W F 10K OHM	RRXAFB5Z1002
R535		CHIP RES.(1608) 1/10W F 10K OHM	RRXAFR5H1002
R535		CHIP RES.(1608) 1/10W F 10K OHM	RRXAFR5Z1002
R536		CHIP RES.(1608) 1/10W F 3.6K OHM	RRXAFB5H3601
R536		CHIP RES.(1608) 1/10W F 3.6K OHM	RRXAFB5Z3601
R536		CHIP RES.(1608) 1/10W F 3.6K OHM	RRXAFR5H3601
R536		CHIP RES.(1608) 1/10W F 3.6K OHM	RRXAFR5Z3601
R537		CHIP RES.(1608) 1/10W J 33K OHM	RRXAJB5Z0333
R537		CHIP RES.(1608) 1/10W J 33K OHM	RRXAJR5Z0333
R540		CHIP RES.(1608) 1/10W J 390K OHM	RRXAJB5Z0394
R540		CHIP RES.(1608) 1/10W J 390K OHM	RRXAJR5Z0394
R541		CHIP RES.(1608) 1/10W J 390K OHM	RRXAJB5Z0394
R541		CHIP RES.(1608) 1/10W J 390K OHM	RRXAJR5Z0394
R542		CARBON RES. 1/4W J 270 OHM	RCX4JATZ0271
R543		CHIP RES.(1608) 1/10W J 4.7K OHM	RRXAJB5Z0472
R543		CHIP RES.(1608) 1/10W J 4.7K OHM	RRXAJR5Z0472
R544		CHIP RES.(1608) 1/10W J 18K OHM	RRXAJB5Z0183
R544		CHIP RES.(1608) 1/10W J 18K OHM	RRXAJR5Z0183
R545		CHIP RES.(1608) 1/10W J 10K OHM	RRXAJB5Z0103
R545		CHIP RES.(1608) 1/10W J 10K OHM	RRXAJR5Z0103
R546		CHIP RES.(1608) 1/10W J 10K OHM	RRXAJB5Z0103
R546		CHIP RES.(1608) 1/10W J 10K OHM	RRXAJR5Z0103
R561	A	CARBON RES. 1/6W J 680 OHM	RCX6JATZ0681
R561	A	CARBON RES. 1/4W J 680 OHM	RCX4JATZ0681
R561	B	CARBON RES. 1/6W J 330 OHM	RCX6JATZ0331
R561	B	CARBON RES. 1/4W J 330 OHM	RCX4JATZ0331
R562		CARBON RES. 1/4W J 270 OHM	RCX4JATZ0271
R564		CARBON RES. 1/4W J 270 OHM	RCX4JATZ0271
R565		CHIP RES.(1608) 1/10W J 3.9K OHM	RRXAJB5Z0392
R565		CHIP RES.(1608) 1/10W J 3.9K OHM	RRXAJR5Z0392
R566		CARBON RES. 1/6W J 330 OHM	RCX6JATZ0331
R566		CARBON RES. 1/4W J 330 OHM	RCX4JATZ0331
R567		CHIP RES.(1608) 1/10W J 3.9K OHM	RRXAJB5Z0392
R567		CHIP RES.(1608) 1/10W J 3.9K OHM	RRXAJR5Z0392
R568		CARBON RES. 1/6W J 330 OHM	RCX6JATZ0331
R568		CARBON RES. 1/4W J 330 OHM	RCX4JATZ0331
R581		CHIP RES.(1608) 1/10W J 1.8K OHM	RRXAJB5Z0182
R581		CHIP RES.(1608) 1/10W J 1.8K OHM	RRXAJR5Z0182
R582		CHIP RES.(1608) 1/10W J 1K OHM	RRXAJB5Z0102
R582		CHIP RES.(1608) 1/10W J 1K OHM	RRXAJR5Z0102
R583		CHIP RES.(1608) 1/10W J 1.8K OHM	RRXAJB5Z0182
R583		CHIP RES.(1608) 1/10W J 1.8K OHM	RRXAJR5Z0182
R584		CHIP RES.(1608) 1/10W J 1K OHM	RRXAJB5Z0102
R584		CHIP RES.(1608) 1/10W J 1K OHM	RRXAJR5Z0102
R585		CHIP RES.(1608) 1/10W J 1.2K OHM	RRXAJB5Z0122
R585		CHIP RES.(1608) 1/10W J 1.2K OHM	RRXAJR5Z0122
R586		CHIP RES.(1608) 1/10W J 1.5K OHM	RRXAJB5Z0152
R586		CHIP RES.(1608) 1/10W J 1.5K OHM	RRXAJR5Z0152
R587		CHIP RES.(1608) 1/10W J 2.2K OHM	RRXAJB5Z0222
R587		CHIP RES.(1608) 1/10W J 2.2K OHM	RRXAJR5Z0222

R589		CHIP RES.(1608) 1/10W 0 OHM	RRXAZB5Z0000
R589		CHIP RES.(1608) 1/10W 0 OHM	RRXAZR5Z0000
R590		CHIP RES.(1608) 1/10W J 4.7K OHM	RRXAJB5Z0472
R590		CHIP RES.(1608) 1/10W J 4.7K OHM	RRXAJR5Z0472
R601	B	CHIP RES.(1608) 1/10W J 10K OHM	RRXAJB5Z0103
R601	B	CHIP RES.(1608) 1/10W J 10K OHM	RRXAJR5Z0103
R602	A	CHIP RES.(1608) 1/10W J 10K OHM	RRXAJB5Z0103
R602	A	CHIP RES.(1608) 1/10W J 10K OHM	RRXAJR5Z0103
R604		CHIP RES.(1608) 1/10W J 10K OHM	RRXAJB5Z0103
R604		CHIP RES.(1608) 1/10W J 10K OHM	RRXAJR5Z0103
R605		CHIP RES.(1608) 1/10W J 10K OHM	RRXAJB5Z0103
R605		CHIP RES.(1608) 1/10W J 10K OHM	RRXAJR5Z0103
R608		CHIP RES.(1608) 1/10W J 10K OHM	RRXAJB5Z0103
R608		CHIP RES.(1608) 1/10W J 10K OHM	RRXAJR5Z0103
R610		CHIP RES.(1608) 1/10W J 10K OHM	RRXAJB5Z0103
R610		CHIP RES.(1608) 1/10W J 10K OHM	RRXAJR5Z0103
R612		CHIP RES.(1608) 1/10W J 10K OHM	RRXAJB5Z0103
R612		CHIP RES.(1608) 1/10W J 10K OHM	RRXAJR5Z0103
R614		CHIP RES.(1608) 1/10W J 10K OHM	RRXAJB5Z0103
R614		CHIP RES.(1608) 1/10W J 10K OHM	RRXAJR5Z0103
R616		CHIP RES.(1608) 1/10W J 10K OHM	RRXAJB5Z0103
R616		CHIP RES.(1608) 1/10W J 10K OHM	RRXAJR5Z0103
R618		CHIP RES.(1608) 1/10W J 10K OHM	RRXAJB5Z0103
R618		CHIP RES.(1608) 1/10W J 10K OHM	RRXAJR5Z0103
R620	B	CHIP RES.(1608) 1/10W J 10K OHM	RRXAJB5Z0103
R620	B	CHIP RES.(1608) 1/10W J 10K OHM	RRXAJR5Z0103
R701		CHIP RES.(1608) 1/10W J 330 OHM	RRXAJB5Z0331
R701		CHIP RES.(1608) 1/10W J 330 OHM	RRXAJR5Z0331
R702		CARBON RES. 1/4W J 1.8K OHM	RCX4JATZ0182
R704		CHIP RES.(1608) 1/10W J 1K OHM	RRXAJB5Z0102
R704		CHIP RES.(1608) 1/10W J 1K OHM	RRXAJR5Z0102
R705		CHIP RES.(1608) 1/10W J 1K OHM	RRXAJB5Z0102
R705		CHIP RES.(1608) 1/10W J 1K OHM	RRXAJR5Z0102
R751		CHIP RES.(1608) 1/10W J 75 OHM	RRXAJB5Z0750
R751		CHIP RES.(1608) 1/10W J 75 OHM	RRXAJR5Z0750
R752		CHIP RES.(1608) 1/10W J 75 OHM	RRXAJB5Z0750
R752		CHIP RES.(1608) 1/10W J 75 OHM	RRXAJR5Z0750
R753		CHIP RES.(1608) 1/10W J 75 OHM	RRXAJB5Z0750
R753		CHIP RES.(1608) 1/10W J 75 OHM	RRXAJR5Z0750
R533A		CARBON RES. 1/6W G 22K OHM	RCX6GATZ0223
R533A		CARBON RES. 1/4W G 22K OHM	RCX4GATZ0223
R534A		CARBON RES. 1/6W G 470 OHM	RCX6GATZ0471
R534A		CARBON RES. 1/4W G 470 OHM	RCX4GATZ0471
RS501		REMOTE RECEIVER MIM-93M9DKF	USESJRSUNT03
RS501		REMOTE RECEIVER PIC-37042LQ	USESJRSKK038
SW501		TACT SWITCH KSM0614B	SST0101HH013
SW501		TACT SWITCH SKQSAF001A	SST0101AL041
SW501		TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
SW502		TACT SWITCH KSM0614B	SST0101HH013
SW502		TACT SWITCH SKQSAF001A	SST0101AL041
SW502		TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
SW503		TACT SWITCH KSM0614B	SST0101HH013
SW503		TACT SWITCH SKQSAF001A	SST0101AL041
SW503		TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
SW504		TACT SWITCH KSM0614B	SST0101HH013
SW504		TACT SWITCH SKQSAF001A	SST0101AL041
SW504		TACT SWITCH TC-1104(H=9.5)	SST0101DNG01

SW505		TACT SWITCH KSM0614B	SST0101HH013
SW505		TACT SWITCH SKQSAF001A	SST0101AL041
SW505		TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
SW506		TACT SWITCH KSM0614B	SST0101HH013
SW506		TACT SWITCH SKQSAF001A	SST0101AL041
SW506		TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
SW507		TACT SWITCH KSM0614B	SST0101HH013
SW507		TACT SWITCH SKQSAF001A	SST0101AL041
SW507		TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
SW508		TACT SWITCH KSM0614B	SST0101HH013
SW508		TACT SWITCH SKQSAF001A	SST0101AL041
SW508		TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
SW509		TACT SWITCH KSM0614B	SST0101HH013
SW509		TACT SWITCH SKQSAF001A	SST0101AL041
SW509		TACT SWITCH TC-1104(H=9.5)	SST0101DNG01
SW511		LEAF SWITCH MXS01830MVP0	SSC0101MCE03
SW512		ROTARY MODE SWITCH SSS-50MD	SSR0106KB002
SW512		ROTARY MODE SWITCH R8100245	SSR0106U3002
T001!		SWITCHING TRANSFOMER CSA-SW0198	LTT00CPSA133
TP301		PCB JUMPER D0.6-P7.5	JW7.5T
TP302		PCB JUMPER D0.6-P11.0	JW11.0T
TP452	B	PCB JUMPER D0.6-P11.5	JW11.5T
TP502		PCB JUMPER D0.6-P5.0	JW5.0T
TP505		PCB JUMPER D0.6-P9.0	JW9.0T
TP506		PCB JUMPER D0.6-P5.0	JW5.0T
TP513		PCB JUMPER D0.6-P5.0	JW5.0T
TP751		PCB JUMPER D0.6-P12.5	JW12.5T
TP753		PCB JUMPER D0.6-P10.0	JW10.0T
TP754		PCB JUMPER D0.6-P9.5	JW9.5T
TU701		TUNER UNIT VH025AP	UTUNNTUSP024
TU701		TUNER UNIT TMZH2-001A	UTUNNTUAL030
TU701		TUNER UNIT TMZH2-010A	UTUNNTUAL034
VR501		CARBON P.O.T. 100K OHM B	VRCB104HH014
X301		X'TAL 3.579545MHZ(20PPM)	FXC355LLN003
X301		X'TAL 3.579545MHZ(20PPM)	FXC355LCHE01
X301		X'TAL 3.579545MHZ(20PPM)	FXC355LDS001
X301		X'TAL 3.579545MHZ(20PPM)	FXC355LDYN01
X502		X'TAL 32.768KHZ(20PPM)	FXC323LQUA01
X502		X'TAL 32.768KHZ(20PPM)	FXC323LDS002
X502		X'TAL 32.768KHZ(20PPM)	FXC323LCHE01
		SENSOR CBA	0VSA13474
Q503		PHOTO TRANSISTOR PT204-6B-12	NPWZT2046B12
Q503		PHOTO TRANSISTOR MID-32A22	NPWZM1D32A22
Q504		PHOTO TRANSISTOR PT204-6B-12	NPWZT2046B12
Q504		PHOTO TRANSISTOR MID-32A22	NPWZM1D32A22
DECK PARTS			
B2	A	CYLINDER ASSEMBLY MK12 NTSC 2HD	N1628CYL
B2	B	CYLINDER ASSEMBLY MK12 NTSC 4HD HIFI	N1668CYL
B2		CYLINDER ASSEMBLY(V) MK12 NTSC 4HD HIFI	N1669CYL
B3		LOADING MOTOR ASSEMBLY MK12	0VSA13665
B8		PULLEY ASSEMBLY MK12	0VSA13500
B9		MOVING GUIDE S PREPARATION MK12	0VSA13560
B10		MOVING GUIDE T PREPARATION MK12	0VSA13562
B11		LOADING ARM(TU) ASSEMBLY MK12	0VSA13300
B12		LOADING ARM(SP) ASSEMBLY MK12	0VSA13299

B31		AC HEAD ASSEMBLY MK12	0VSA13275
B35		TAPE GUIDE ARM ASSEMBLY MK12	0VSA13277
B37		CAPSTAN MOTOR 288/VCCM012	N9672CML
B52		CAP BELT(DSNY) MK11	0VM414098
B73		FE HEAD ASSEMBLY MK11	N9742FEL
B73		FE HEAD ASSEMBLY MK11	N9743FEL
B73		FE HEAD(MK11) MH-131SF11	DHVEC01Z0005
B73		FE HEAD(MK11) VTR-1X2ERS11-148	DHVEC01TE004
B73		FE HEAD(MK12) VTR-1X2ERS11-155	DHVEC01TE005
B73		FE HEAD(MK12) HVFHP0047A	DHVEC01AL007
B74		PRISM MK10	0VM202870
B121		WORM MK12	0VM414091
B126		PULLEY MK12	0VM414330
B133		IDLER GEAR MK12	0VM305738
B134		IDLER ARM MK12	0VM305739
B148		TG CAP MK11	0VM412972
B300		C DRIVE LEVER(TU) MK12	0VM203773
B303		F DOOR OPENER MK12	0VM203751
B313		C DRIVE SPRING MK12	0VM414145
B347		GUIDE HOLDER A MK10	0VM304920
B354		SLIDER(TU) MK12	0VM101172
B355		SLIDER(SP) MK12	0VM101182
B359		CLEANER LEVER MK10	0VM304413
B360		CLEANER ROLLER MK9	0VM410032C
B361		CL POST MK10	0VM411114
B410		PINCH ARM ASSEMBLY(1) MK12	0VSA13285
B410		PINCH ARM ASSEMBLY(3) MK12	0VSA13288
B410		PINCH ARM(A) ASSEMBLY(4) MK12	0VSA13572
B410		PINCH ARM(A) ASSEMBLY(5) MK12	0VSA13788
B411		PINCH SPRING MK12	0VM414644
B414		M BRAKE(SP) ASSEMBLY MK12	0VSA13282
B416		M BRAKE(TU) ASSEMBLY MK12	0VSA13283
B417		TENSION SPG(3002654) MK12	0VM414221E
B425		LOCK LEVER SPRING MK10	0VM411110
B426		KICK PULLEY MK10	0VM411095
B482		CASSETTE PLATE MK12	0VM203749
B483		LOCK LEVER MK12	0VM414095
B487		BAND BRAKE(SP) MK12	0VM305723
B488		MODE LEVER MK12	0VM101173
B491		CAM GEAR(A) MK12	0VM101174
B492		MODE GEAR MK12	0VM203769
B494		C DOOR OPENER MK12	0VM305719
B499		T LEVER HOLDER MK12	0VM305729
B501		WORM HOLDER MK12	0VM203767
B502		CAM GEAR(B) MK12	0VM305721
B507		REEL WASHER MK9 5*2.1*0.5	0VM410058
B508		S BRAKE SPRING MK10	0VM411121
B513		CAM WASHER MK12	0VM414741
B514		SCREW RACK MK10	0VM411535
B516		REEL WASHER MK9 5*2.1*0.5	0VM410058
B520		TU BRAKE SPRING MK12	0VM414285
B521		REV BRAKE SPRING MK12	0VM414222
B522		TG POST ASSEMBLY MK11	0VSA12080
B525		LDG BELT MK11	0VM412804
B529		CLEANER ASSEMBLY MK10	0VSA11161
B553		REV SPRING MK11	0VM412555
B555		RACK ASSEMBLY MK12	0VSA13289

B557		MOTOR PULLEY U5	0VM403205A
B558		LOADING MOTOR M31E-1 R14 7352	MMDZB12MM005
B559		CLUTCH ASSEMBLY MK12	0VSA13284
B560		KICK SPRING MK10	0VM411475A
B562		C DRIVE LEVER(SP) MK12	0VM203772
B563		SLIDER SHAFT MK12	0VM305762
B564		M GEAR MK12	0VM305735
B565		SENSOR GEAR MK12	0VM305736
B567		PINCH ARM(B) MK12	0VM305718
B568		BT ARM MK12	0VM305728
B569	A	CAM HOLDER(F) MK12	0VM305722
B570		CAM RACK SPRING(HI) MK11	0VM412923
B571		P.S.W CUT 1.6X4.0X0.5T	0VM408485A
B573		REEL(SP)(D2) MK12	0VM203755
B574		REEL(TU)(D2) MK12	0VM203756
B587		TENSION LEVER ASSEMBLY MK12	0VSA13279
B590		BRAKE ARM(TU) MK12	0VM203752
B591		BAND BRAKE(TU) MK12	0VM305724C
B592		TG POST MK11	0VM412550
B593	B	CAM HOLDER(F) ASSEMBLY MK12	0VSA13390
L1051		SCREW, B-TIGHT M2.6X6 PAN HEAD+	GPMB9060
L1053		SCREW, S-TIGHT M2.6X8 WASHER HEAD+	GCMS9080
L1151		SCREW, SEMS M2.6X4 PAN HEAD+	CPM39040
L1191		SCREW, S-TIGHT M2.6X8 WASHER HEAD+	GCMS9080
L1321		SCREW, S-TIGHT M3X6 BIND HEAD+	GBMS3060
L1406		AC HEAD SCREW MK9	0VM410964
L1450		SCREW, SEMS M2.6X5 PAN HEAD+	CPM39050
L1466		SCREW, S-TIGHT M2.6X6 BIND HEAD+	GBMS9060
L1467		SCREW, S-TIGHT M2.6X5 WASHER HEAD+	GCMS9050

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